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PART II

FEDERAL COMMUNICATIONS COMMISSION

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LAND MOBILE RADIO SERVICES

Consolidation of Regulations

FEDERAL COMMUNICATIONS COMMISSION

[47 CFR Parts 89, 90, 91 and 93]

[Docket No. 21348; FCC 77-521]

LAND MOBILE RADIO SERVICES

Consolidation of Regulations

AGENCY: Federal Communications Commission (FCC).

ACTION: Notice of Proposed Rule Making.

SUMMARY: This Notice proposes to consolidate Parts 89, 91 and 93 of the Commissions rules for the purpose of clarification, simplification, and reregulation of the various licensing, technical, and operational requirements in the Private Land Mobile Radio Services operating under those rules.

DATES: Comments due by January 4, 1978, and reply comments by February 2, 1978.

ADDRESSES: Federal Communications Commission, Washington, D.C. 20554.

FOR FURTHER INFORMATION CONTACT:

Mr. Richard Taube, Industrial and Public Safety Rules Division, Safety and Special Radio Services Bureau, (202) 632-6497.

In the matter of amendment of the Commission's rules governing the Private Land Mobile Radio Services to provide a new part 90 that re-regulates and consolidates Parts 89, 91, and 93.

Adopted: July 21, 1977.

Released: July 27, 1977.

1. Notice of Proposed Rule Making is hereby given in the above entitled matter. The purpose of this proceeding is to examine and to consolidate and re-regulate as necessary the Commission's Rules that govern the Private Land Mobile Radio Services. These rules are contained in Parts 89, 91, and 93 of Volume V of the Commission's Rules and cover, respectively, the Public Safety, Industrial, and Land Transportation Radio Services.

BACKGROUND

2. The Commission's Rules for the Private Land Mobile Radio Services are presently in three separate rule parts that contain procedures for obtaining licenses, and the technical standards of those licenses. Part 89 (Public Safety) encompasses local governmental and public emergency radio uses; Part 91 (Industrial) covers radio operations for various commercial, manufacturing, and utility activities; and Part 93 (Land Transportation) combines the radio services for passenger and freight carrying land-based vehicles.

3. The radio services in the separate rule parts are distinguishable with respect to the activities which may be licensed, permissible communications, and most of the available frequencies. However, most of the general provisions in each part are very similar and often are identical both in language and in intent. These provisions include general eligibility requirements, definitions, application procedures, most of the technical and operational standards, emergency operation requirements, and developmental licensing procedures. Additionally, a number of special provisions relating to frequency selection are similar in language and effect in each of the three rule parts. These provisions cover frequency assignment policies, coordination requirements, cooperative-use procedures, and the land-mobile spectrum management program that has been developed in the Chicago Region. Rules for certain specialized uses of land mobile radio facilities also appear on an across-the-board basis. These include provisions for secondary non-voice signalling methods, automatic vehicle monitoring (AVM), and UHF-sharing. Finally, provisions for the use of special frequency bands are included almost identically in each of these rule parts to cover operations in bands from 72-76 MHz to 900 MHz and above.

4. In light of the commonality of major portions of Parts 89, 91, and 93, the Commission has studied the possibility of consolidating these rule parts into one new comprehensive rule part. It appears that consolidation, which can include required re-regulation of the rules, could be readily accomplished and would have many advantages. From the standpoint of simplification, consolidation of the rules should enhance comprehension and facilities referencing and research. Administratively, rule change actions would be less complicated and rules maintenance requirements would be significantly reduced.

5. The rule consolidation effort also provides an excellent opportunity to consider necessary de-regulation of land-mobile radio provisions. Here, we would delete or modify standards, requirements, and limitations that are no longer applicable or no longer serve valid purposes. This aspect alone would appear to warrant that a proceeding of this nature be undertaken.

6. Essentially, the proposals would involve rule changes of both an editorial and substantive nature. The proceeding is not intended, however, to alter the purposes and standards of the various land-mobile radio services; nor are we here concerned with frequency reallocation matters, the authorization of innovative procedures or requirements, or matters dealing with competitive or divergent interests. Nevertheless, the proposals for the indicated re-regulation purposes are unusually complex, extensive, and voluminuos. In light of these factors and to enhance public response, the Commission coordinated the contemplated rule changes with representative groups for the land mobile community to pre-review the proposals as to format, clarity, and effectiveness. One major organization, the Land Mobile Communications Council (LMCC) has provided a number of important suggestions, many of which have been included in the proposals. The LMCC summary report and its recommendations are available to interested persons in the Docket File for this proceeding. Additionally, while it is not feasible to discuss each change involved in this proceeding, the following paragraphs detail the revised rules structure as would appear in Part 90, and significant modifications are specifically noted. Further, Attachment A is a quick-reference summary of the rule changes proposed herein and includes a cross-reference table showing where present rule sections would appear in Part 90. Attachment B is the complete proposed Part 90.

THE PROPOSALS

7. In consideration of the foregoing, the Commission finds that it is appropriate to revise and amend its rules to consolidate Parts 89, 91, and 93 into one new rule part for the land mobile radio services, to be designated as Part 90. A similar rule making action was recently completed for consolidation and re-regulation of private operational-fixed (microwave) radio provisions in new rule Part 94.[1]

8. Part 90 would be divided into seventeen subparts as contrasted to the thirty-four subparts throughout the present Parts 89, 91, and 93. Generally, radio services would no longer be separate subparts as at present but would be included under the broader categories of Public Safety, Industrial, or Land Transportation Services. Two exceptions would be separate subparts for the Special Emergency Service and the Radiolocation Service. The initial subpart (subpart A) contains general information as to the basis and purpose of the private land mobile rules and describes the content and organization of Part 90. One new provision (§ 90.5) would include references to other parts of the Commission's Rules that are often of important to applicants and licensees in the private land mobile services. Definitions are included in this subpart, a number of which are new definitions and others are modified as necessary to reflect current standards. Many matters that appear as "general information" in present Parts 89, 91, and 93 are not considered appropriate for inclusion in this subpart. For example, Part 89, includes application requirements and procedures, technical standards, and operating requirements all as general information. In the proposed Part 90, however, these matters are covered in separate more pertinent rule subparts.

9. Proposed Subparts B, C, D, E, and F cover, respectively the Public Safety, the Special Emergency, the Industrial, the Land Transportation, and the Radiolocation Radio Services. Each Subpart sets forth for each radio service it covers the standards for eligibility, permissible communications, any special conditions, and a listing of the frequencies assignable together with their limitations. One radio service, the State Guard Service would be deleted as a separate service

[1] See the Report and Order in Docket 19869, adopted April 23, 1975 (40 FR 93, May 13, 1975).

with provision made for licensing State Guard functions in the Local Government Radio Service (see § 90.17 (b) and (c)).[2] The only other re-classification in radio services would expand the present Industrial Radiolocation service to become the Radiolocation Radio Service to incorporate all radiolocation functions (see Subpart F).

10. One change in Part 90 that should be helpful is that each radio service would contain for ready-reference virtually every frequency that may be regularly assigned in the particular service involved, as well as those frequencies shared on a secondary basis with licensees in other services, available only on a renewal basis under "grandfathered" provisions, or assignable under limited conditions or for special uses, including developmental uses. The frequencies would be listed in tables supplemented by a description of special additional frequencies assignable. This should greatly simplify an applicant's search for appropriate frequencies, particularly in the Land Transportation services where the frequencies are not presently listed in a table format. The only exception to the frequency lists is the frequency 4883.2 kHz, which is available in all of the services without the necessity of specific authorization, but only in Alaska (see § 90.253). Another change that should aid in frequency selection applies to the limitations on the assignable frequencies. We have eliminated redundant provisions and combined and renumbered many of these limitations, while others are modified to simplify the language. Finally, we have included as a supplement to Part 90, a single complete numerical listing of every frequency assignable together with a description of radio services for the frequency, general uses, and any special uses. Specific comments as to the format and usefulness of this supplemental listing would be particularly helpful.

11. Two modifications of special note applicable to eligibility provisions in the radio services rule parts include § 90.35 (a) in Subpart C. This rule applies to eligibility in the medical services category in the Special Emergency Radio Service, and contains new language to emphasize the present requirements that associations, governmental entities, and governmental agencies may hold licenses for medical operations only when they actively participate in, and provide direct operational control of, the medical services communications activities to be conducted. Another change to note is in the eligibility provisions of the Special Industrial Radio Services in § 90.73 of Subpart D. Here, present provisions have been modified to clarify the categories that may be licensed in this radio service. See also the deletions in the Taxicab Radio Service of limitations on use of communication units in that service that apply to certain specified taxicab-related activities. These units are already countenanced under the rules describing permissible communications.

12. Many provisions that are presently included under individual radio services subparts of Parts 89, 91, and 93, concern matters that will not be included in the services sections in Part 90. These include points of communication, secondary non-voice signalling, requirements for relay and control stations, etc., all of which would appear in other appropriate subparts of Part 90.

13. Proposed subpart G contains the licensing procedures for private land mobile station applications. Provisions therein generally conform to present rule requirements for filing and processing license requests. Some changes to note include the addition of a section (now in Part 1 of the Commission's Rules) as to procedures for Canadian licensees to operate in the United States when permitted under treaty agreements (§ 90.121); the elimination of references to construction permits, as these are no longer issued; and the deletion of requirements, including the use of Form 456, for notification to a Commission field office of commencement of operation, as presently contained in Parts 89, 91, and 93 in numerous sections. In addition, we have extensively expanded the rules concerning procedures for making changes in authorized stations. For example, Section 90.135 describes and clarifies each specific type of change that requires an application for modification of license.

14. The Commission's policies for assignment and use of frequencies in the private land mobile services are now detailed in proposed Subpart H. Important information is included in this subpart with respect to such matters as intersystem interference, frequency coordination, and cooperative use. Note, however, that cooperative use provisions are the subject of the rule making proceeding in Docket 18921, and when action is taken in that proceeding, the new rules will be incorporated into proposed Subpart H. One change from present policy deletes the requirement for applicants to select the highest order of frequencies available as the necessary exceptions to this standard have rendered the requirement relatively meaningless.

15. Technical standards of a general nature are detailed in Subpart I. Of note is new § 90.207 which sets forth not only the emissions that may be authorized under this part, but also the references to the types of operations in which they may be utilized. One present requirement being deleted as unwarranted is that applicants will no longer need to furnish a description of tone codes for non-voice signalling operations. Those technical standards which apply to specialized operations are set forth in Subpart J. That subpart includes secondary non-voice signalling provisions, and the special requirements for radioteleprinter, radiofacsimile, automatic vehicle monitoring, and radio call boxes. Subpart J also consolidates the various present rule provisions for the authorizations and operation of relay repeater, (including vehicular repeater), and control stations. This should be particularly advantageous in the design of systems for private land mobile operations.

16. There are a number of special frequencies or frequency bands which are available on a general basis in the private land mobile services. They are noted in the frequency tables but the standards applicable to these bands are extensive and, therefore, they have been referenced and included in Subparts K, L, and M. Subpart K contains the special standards for the frequency 4383.8 kHz, and the bands 27.235–27.275 MHz, 72–76 MHz, 216–220 MHz, 450–470 MHz (secondary cross-service fixed), and 1427–1435 MHz. Provisions for substitution of frequencies below 25 MHz are also included in this subpart. Subpart L deals exclusively with the special standards, requirements, and procedures for authorizations in the band 470–512 MHz on the frequencies derived from the Commission's UHF–TV Sharing Program. Similarly, Subpart M governs special licensing and use of frequencies in the 806–821 MHz and 851–866 MHz bands.

17. Subpart N covers operating requirements. Many of these requirements relating to such matters as permissible and prohibited communications, interstation communication limitations, points of communication, and operation of mobile units by persons other than the licensee, presently appear in differing formats, in Parts 89, 91, and 93, either in general provisions or under application procedures, or in the radio services subparts. There is also presently a somewhat random pattern as to where station-identification requirements can be found. Incorporation of each of these operational requirements into one Subpart in Part 90 has enabled us to provide language which is consistent and which should facilitate comprehension and compliance. To the same end, we have combined the various provisions as to control point and dispatch requirements. Another clarifying provision appears in § 90.419(a), concerning the present provisions in Part 89 that permit secondary fixed uses of Public Safety and Special Emergency base station frequencies. Such secondary fixed uses are intended to be authorized only on frequencies below 450 MHz, and this provision reflects this limitation. It also appears to the Commission that present special provisions which allow Industrial and Land Transportation stations to utilize base station frequencies for fixed station communications under certain restricted circumstances involving urgent need to contact mobile units should be extended to the Public Safety and Special Emergency Services on frequencies above 450 MHz. Section 90.419(b) reflects this change. Note, also, the new provision in § 90.341(b), added to permit licensees

[2] There is no apparent need for the eligibility group presently covered by the State Guard Radio Service to be distinguished from other governmental entities as the functions to be served by radio communications can be met in the Local Government Radio Service. The only frequency specifically assignable for State Guard operations is 2726 kHz and this frequency is included in the list available in the Local Government Radio Service.

sharing a tower to appoint one licensee to perform inspection and logging functions. This is not now authorized in the rules but has been allowed on a case-by-case basis.

18. Subpart O sets forth the special requirements for licensing of stations in the Chicago Region under the Chicago Land Mobile Spectrum Management Program. The program applies to major areas in Illinois, Indiana, Iowa, Michigan and Wisconsin.

19. The developmental licensing procedures are contained in Subpart P. The final subpart, Subpart Q, includes the provisions that apply to formalized emergency communications plans for the Industrial and Land Transportation Services. The Industrial plan, the Industrial Communications Emergency Plan (ICEP), contains the requirements recently adopted in Docket 19312 (FCC 75–1285). The Land Transportation Industries Communications Emergency Plan (LATICEP) will be revised in a separate Commission action.

CONCLUSION

20. As stated, the Commission believes that the proposals in this proceeding can contribute substantially to understanding and compliance with rule standards and requirements for the licensing and operation of private land mobile systems. We find, therefore, that proposed rulemaking to adopt these modifications would serve the public interest. It is recognized, however, that in rule changes as voluminous as those proposed herein, there are bound to be provisions that could be further clarified, consolidated, or, in the interest of de-regulation, deleted. Interested persons are urged, therefore, to recommend other possible modifications that can be incorporated within the scope of this rulemaking action. At the same time, it would be helpful if any observed omissions and errors were noted so that they could be corrected. Further, there are and will be a number of concurrent Commission rulemaking proceedings that affect or change specific rules being proposed herein. Such changes will be included at the time final action is taken in this docket.

21. In accordance with the foregoing, Notice of Proposed Rule Making is hereby given to revise Parts 89, 91, and 93 of the Commission's rules by establishment of a new Part 90 that consolidates such rule parts. The specific rule changes proposed are set forth in attachment B. Authority for these proposed amendments are contained in sections 4(i) and 303 of the Communications Act of 1934, as amended.

22. Pursuant to applicable procedures set forth in § 1.415 of the Commission's rules, interested persons may file comments on or before January 4, 1976, and reply comments on or before February 2, 1976. In accordance with the provisions of § 1.419(b) of the Commission's rules an original and fourteen copies of all statements, briefs, and comments filed shall be furnished the Commission. All relevant and timely comments and reply comments will be considered by the Commission before final action is taken. The Commission may also take into account other relevant information before it, in addition to specific comments invited by this Notice.

FEDERAL COMMUNICATIONS COMMISSION,
VINCENT J. MULLINS,
Secretary.

ATTACHMENT A.—*Cross reference*

Present section No.	Proposed section and title	Summary of changes proposed
89.1	90.1—Basis and purpose	Minor rewording.
89.3	90.7—Definitions	Deletions and additions as necessary—minor reorganization and clarification.
89.5	NA	
89.7	90.415—Prohibited uses	Minor rewording.
89.9	90.115—Ineligibility of foreign governments	Do.
89.11	90.151—Assignment of station authorizations	Do.
89.12	90.243—Mobile relay stations	Relay, repeater and control uses separated under specific sections with minor rewording and clarification.
	90.245—Fixed relay stations	
	90.247—Vehicular repeater stations	
	90.249—Control stations	
89.13 and 89.14.	90.179—Cooperative use of stations	Awaits resolution of docket 18921.
89.15 (a), (b), and (c).	90.175—Frequency coordination requirements	Minor rewording.
89.15 (d) and (e).	90.177—Protection of certain radio receiving locations.	No change.
89.17	90.411—Civil defense communications in the public safety and special emergency radio services.	Do.
89.51	90.113—Station authorization required	Minor rewording
89.53(a)	90.117—Applications for radio station authorizations.	Do.
89.53 (b), (c), and (d).	NA	
89.55(a)	90.117—Applications for radio station authorization.	Minor rewording, added reference to fees information.
89.55(b)	90.127(a)—Filing of applications	Minor rewording, added Chicago filing address information.
89.55(c)	90.119(b)—Application forms 90.127(b)—Filing of applications	Information set forth in 2 new sections with minor rewording.
89.55(d)	90.139—Preliminary processing of applications	No change.
89.55(e)	90.137—Applications for operation at temporary location.	Minor rewording.
89.55(f)	90.129(c)—Supplemental information to be routinely submitted with applications.	Do.
89.56	90.147—Mailing address furnished by licensee	No change.
89.57	90.125—Who may sign applications	Paragraph (c) expanded.
89.59 (a) and (b).	90.119(a)—Application forms	Minor rewording, referenced form 1046, eliminated construction permit.
89.59(d)	90.119(d)—Application forms	Minor rewording.
89.59(e)	90.145—Special temporary authority	Do.
89.59(f)	NA	Requirement to file form 456 deleted.
89.59(g)	90.119(b) Application forms	Minor rewording.
89.60	90.483 Chicago region	No change.
89.61	90.145 Special temporary authority	Minor rewording—added an eligibility statement requirement.
89.63	90.129—Supplemental information to be routinely submitted with applications.	Minor rewording.
89.65	90.143—Grants of application	Do.
89.67	90.139—Preliminary processing of applications	Deleted reference to alien restrictions.
89.69	90.131—Amendment or dismissal of applications	No change
89.71	90.153—Time in which stations must be placed in operation.	Minor rewording, deleted construction permit requirements.
89.73	90.149—License term	Minor rewording with clarification.
89.75	90.135—Modification of license	Rewritten to specify changes requiring applications to be approved.
89.77	90.155—Discontinuance of station operation	No change.
89.79	90.191(c)—Police radio service	Do.
89.81	90.487—Special provisions relating to frequency assignments in the Chicago region.	Do.
89.101(a), (b) (1), and (g).	90.173—Policies governing the assignment of frequencies.	Deletions and additions as necessary—minor rewording and clarification.
89.101(b)(2)	90.253—Use of the frequency 4363.8 kHz	Combines applicable provisions in this and other sections.
89.101(c)	90.257—Assignment and use of frequencies in the band 72–76 MHz.	Do.
89.101(d)	90.255—Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz.	Do.
89.101(e)	90.263—Substitution of frequencies below 25 MHz.	Combines applicable provisions.
89.101 (h), (i), and (l).	See various frequency tables in subpts. B, C, and F.	Extensive deletions, additions and rearrangements as necessary, minor rewording and clarification.
89.101 (p) and (q).	90.261—Assignment and use of frequencies in the band 450–470 MHz for fixed operations.	No change.
89.102	90.241—Radio call box operations	Minor rewording.
89.103	90.213—Frequency tolerance	Includes part of SSB requirements from sec. 89.124—minor rewording.
89.105	90.207—Types of emission	Reworded to reference each operation with types of emission permitted.
89.107	90.209—Bandwidth limitations	Minor rewording and includes schedule from SSB requirements in sec. 89.124.
89.109	90.211—Modulation requirements	Minor rewording and clarification.
89.111	90.205—Power	Do.
89.113(a)	90.427—Precaution against unauthorized operation.	Minor rewording combined with other sections.
89.113 (b), (c), (d), and (e).	90–429—Control point and dispatch point requirements.	Minor rewording and rearrangement.

Present section No.	Proposed section and title	Summary of changes proposed
89.115	90.215—Transmitter measurements	Minor rewording.
89.117	90.203—Type acceptance required	Combined with other sections.
89.119	do	Do.
89.120	90.239—Interim provisions for operation of Automatic Vehicle Monitoring (AVM) systems.	Minor rewording.
89.122	90.237—Interim provisions for operation of radioteleprinter and radiofacsimile devices.	Do.
89.123	Subpt. L—Authorization in the band 470-512 MHz (UHF-TV sharing).	Combined with other sections.
89.124	NA	Rearranged by including technical standards in other appropriate sections.
89.126	90.235—Secondary fixed tone-signalling and alarm operations.	Minor rewording.
89.151 (a), (b), (d), and (e).	90.403—General operating procedure.	Added priority to safety-of-life-or-property communications.
89.151(c)	90.19(b)—Police radio service	Combined with other sections.
89.153	90.425—Station identification	Combined with rules for industrial and land transporation.
89.155	90.403—General operating procedure	Combined with other sections.
89.156	90.423—Operations on board aircraft	Minor rewording.
89.157	90.421—Operation of mobile units in vehicles not under the control of the licensee.	Combined with other sections.
89.159	90.409—Emergency operation of public safety and special emergency mobile stations at fixed locations.	No change.
89.161(a)	90.417—Interstation communications	Combined with other sections.
89.161(b)	90.253—Use of the frequency 4383.8 kHz	Minor rewording.
89.163 (a), (b), and (c).	90.433—Operator license requirements	Do.
89.163(d)	90.431—Unattended operation	Do.
89.163(f)	90.427—Precautions against unauthorized operation.	Minor rewording, combined with other sections.
89.165	90.435—Posting of operator license	Minor rewording.
89.167	90.437—Posting station licenses and transmitter identification cards or plates.	Do.
89.169	90.439—Inspection of stations	No change.
89.171	90.441—Inspection and maintenance of tower marking and associated control equipment.	Do.
89.173	90.449—Answers to a notice of violation	Minor rewording.
89.175	90.443—Contents of station records	No change.
89.177	90.445—Form of station records	Do.
89.179	90.447—Retention of station records	Do.
89.201	90.503—Eligibility	Minor rewording.
89.203	90.505—Showing required	Do.
89.205	90.507—Limitations on use	Do.
89.207	90.509—Frequencies available for assignment	No change.
89.209	90.511—Interference	Minor rewording.
89.211	90.513—Special provisions	Do.
89.213	90.515—Change or cancellation of authorization without hearing.	No change except title.
89.215	90.517—Report of operation	Minor rewording.
89.251, and 89.253.	90.17(a)—Local government radio service	Minor rewording and rearrangement.
89.255	90.419—Points of communication	Combined with other sections.
89.257	90.421—Operation of mobile units in vehicles not under the control of the licensee.	Do.
89.259 (a) and (f).	90.17(b)—Local government radio service	Combined, renumbered limitations, included all frequencies in table.
89.259(b)	90.173—Policies governing the assignment of frequencies.	Combined with other sections.
89.259(c)	NA	Deleted.
89.259(d)	90.17(e)—Local government radio service	Minor rewording.
89.259(g)	90.17(c)—Local government radio service	Renumbered and reworded with certain exceptions noted for sec. 89.254(g) (4), (5), and (7).
89.259(g)(4)	90.249—Control stations	Combined with other sections.
89.259(g)(5)	90.173(i)—Policies governing the assignment of frequencies.	Minor rewording.
89.259(g)(7)	NA	Deleted.
89.259(h)	NA	Do.
89.301 and 89.303.	90.19(a)—Police radio service	Minor rewording and rearrangement.
89.305 (a), (b), and (c).	90.419—Points of communications	Combined with other sections.
89.305(d)	90.19(b)—Police radio service	Do.
89.307(b)	90.421—Operation of mobile units in vehicles not under the control of the license.	Do.
89.307(c)	90.19(b)—Police radio service	Do.
89.309 (a) and (g).	90.19(d)—Police radio service	Combined, renumbered limitations, included all frequencies in the table.
89.309(b)	90.173—Policies governing the assignment of frequencies.	Combined with other sections.
89.309(e)	90.19 (f) and (g)—Police radio service	Minor rewording.
89.309(d)	NA	Deleted.
89.309(e)	90.19(g)—Police radio service	Minor rewording.
89.309(h)	90.19(e)—Police radio service	Renumbered and reworded limitations with certain exceptions noted for secs. 90.304(h) (1), (2), and (4).
89.309(h)(1)	NA	Deleted.
89.309(h)(2)	90.173(i)—Policies governing the assignment of frequencies.	Minor rewording.
89.309(h)(4)	90.249—Control stations	Combined with other sections.
89.309(i)	NA	Deleted.
89.351 and 89.353.	90.21(a)—Fire radio service	Minor rewording and rearrangement.
89.355	90.419—Points of communications	Combined with other sections.
89.357	90.471—Operation of mobile units in vehicles not under the control of the licensee.	Do.
89.359, (a) and (f).	90.21(b)—Fire radio service	Combined, included all frequencies in the table—renumbered limitations.
89.359(b)	90.173—Policies governing the assignment of frequencies.	Combined with other sections.
89.359(c)	90.21(e)—Fire radio service	Minor rewording.
89.359(d)	NA	Deleted.
89.359(g)	90.21(c)—Fire radio service	Renumbered and reworded limitations with certain exceptions noted for secs. 89.359(g) (1), (2), and (4).
89.359(g)(1)	NA	Deleted.

Present section No.	Proposed section and title	Summary of changes proposed
89.359(g)(3)	90.173(i)—Policies governing the assignment of frequencies.	Minor rewording.
89.359(g)(4)	90.249—Control stations	Combined with other sections.
89.359(h)	NA	Deleted.
89.401 and 89.403.	90.23(a)—Highway maintenance radio service	Minor rewording and rearrangement.
89.405	90.419—Points of communications	Combined with other sections.
89.407(b)	90.421—Operation of mobile units in vehicles not under the control of the licensee.	Do.
89.407(c)	90.23(c)—Highway maintenance radio service	Included in limitation on particular frequencies.
89.409 (a) and (e).	90.23(b)—Highway maintenance radio service	Combined—included all frequencies in table—renumbered limits.
89.409(b)	NA	Deleted.
89.409(c)	90.23(e)—Highway maintenance radio service	Minor rewording.
89.409(f)	90.23(c)—Highway maintenance radio service	Renumbered and reworded limits except as noted for sec. 89.409(f)(1).
89.409(f)(1)	90.249—Control stations	Combined with other sections.
89.409(g)	90.173—Policies governing the assignment of frequencies.	Do.
89.409(h)	NA	Deleted.
89.451 and 89.453.	90.25(a)—Forestry-conservation radio service	Minor rewording and rearrangement.
89.455	90.419—Points of communications	Combined with other sections.
89.457	90.421—Operation of mobile units in vehicles not under the control of the licensee.	Do.
89.459 (a) and (d).	90.25(b)—Forestry-conservation radio service	Combined—included all frequencies in table, renumbered limitations.
89.459(b)	NA	Deleted.
89.459(e)	90.25(c)—Forestry-conservation radio service	Renumbered and reworded limits with exception noted for sec. 89.459(e)(1).
89.459(e)(1)	90.249—Control stations	Combined with other sections.
89.501(f)	90.173(h)—Policies governing the assignment of frequencies.	Do.
89.501(g)	NA	Deleted.
89.501	90.33—Scope	Minor rewording.
89.503	90.35—Medical services	Minor rewording. 1st sentence of (b) deleted.
89.505	90.37—Rescue organization	Minor rewording.
89.507	90.39—Veterinarians	Do.
89.509	90.41—Disaster relief organization	Do.
89.511	90.43—School buses	Do.
89.513	90.45—Beach patrols	Do.
89.515	90.47—Establishments in isolated areas	Do.
89.517	90.49—Communication standby facilities	Do.
89.519	90.51—Emergency repair of public communications facilities.	Do.
89.521	90.419—Points of communication	Combined with other sections, minor rewording.
89.523(a)	90.243—Mobile relay stations	Do.
89.523(b)	NA	Specific requirement for monitoring deleted. See sec. 90.403(c).
89.523(c)	NA	Deleted.
89.523(d)	90.55—Paging operations	Minor rewording.
89.525(a) and (e).	90.53(a)—Frequencies available	Combined—included all frequencies in table. Renumbered limitations.
89.525(b)	NA	Deleted.
89.525(c)	90.53(d)—Frequencies available	Minor rewording.
89.525(d)	90.53(a)—Frequencies available	Do.
89.525(f)	90.53(b)—Frequencies available	Renumbered and reworded limitations except as noted for secs. 89.525(f) (1), (13), and (22).
89.525(f)(1)	90.173(i)—Policies governing the assignment of frequencies.	Minor rewording.
89.525(f)(13)	NA	Deleted.
89.525(f)(22)	90.249—Control station	Combined with other sections.
89.551	90.17(c)—Local government radio service	State guard radio service moved to category of local government radio service.
89.553	90.405—Permissible communications	Combined with other sections.
89.555	90.419—Points of communication	Do.
89.559	90.17 (b) and (c)—Local government radio service.	Included in local government radio service.
89.601	90.351—Scope	Minor rewording and rearrangement.
89.602	90.353—Definitions	No change.
89.603	90.351—Scope	Minor rewording and rearrangement.
89.604	90.355—Eligibility	No change.
89.605	90.387—Station identification	Do.
89.651	90.379—Limitations on power and antenna height.	Do.
89.652	90.381—Restrictions on operational fixed stations	Do.
89.653	90.389—Restriction on interconnection	Do.
89.655	90.385—Restrictions and limitations on permissible communications, on use, and on mode of operation.	Do.
89.656	90.393—Special conditions governing the furnishing of radio equipment by licensees.	Do.
89.657	90.373—Restrictions on licensing manufacturers in the 806-821 MHz, and 851-866 MHz bands.	Do.
89.658	90.383—Acceptability of transmitters for licensing in the 806-821 MHz, and 851-866 MHz bands.	Do.
89.701	90.357—Forms to be used	Do.
89.702	90.359—Supplemental information to be furnished by applicants for facilities under this subpart.	Do.
89.703	90.391—Supplemental reports required of licensees authorized under this subpart.	Do.
89.704	90.363—Processing of applications	Do.
89.751	90.365—Selection and assignment of frequencies	Do.
89.801	90.375—Trunked systems loading requirements	No change (except title).
89.802	90.377—Conventional systems loading requirements.	Do.
89.803	90.369—Other criteria to be applied in assigning channels for use in conventional systems of communication.	No change.
89.804	90.395—Number of systems authorized in a geographical area.	No change (except title).

Present Section Number	Proposed Section and Title	Summary of Changes Proposed
89.805	Limitation on the number of frequencies assignable for conventional systems.	No change.
89.806	90.371—Limitation on the number of frequency pairs assignable for trunked systems and on the number of trunked systems.	Do.
89.807	90.397—Special licensing requirements for radio stations used to provide service to persons other than the licensee.	Do.
89.808	90.361—Special limitations on amendment of applications for assignment or transfer of authorizations for radio systems used to provide service to persons other than the licensee.	Do.
91.1	90.1—Basis and purpose	Minor rewording.
91.2	90.415—Prohibited uses	Combined with other sections.
91.3	90.7—Definitions	Deletions and additions as necessary. Minor reorganization and clarification.
91.4	90.115—Ineligibility of foreign governments	Minor rewording.
91.5	90.151—Assignment of station authorization	Minor rewording.
91.6	90.179—Cooperative use of radio services	Action deferred for resolution of docket 18921.
91.7	90.243—Mobile relay stations	Relay, repeater and control uses separated under specific sections with minor rewording and clarification.
	90.245—Fixed relay stations	
	90.247—Vehicular repeater stations	
	90.249—Control stations	
91.8(a)	90.173 (a) and (b)—Policies governing the assignment of frequencies.	Minor rewording.
	90.175—Frequency coordination requirements	Do.
91.8(b)	NA	Deleted.
91.8(c)	Various radio services sections under limitation on number of frequencies assignable.	Minor rewording.
91.8(d)	NA	Deleted.
91.8(e)	90.173(g)—Policies governing the assignment of frequencies.	Minor rewording.
91.8(f)	90.173(c)—Policies governing the assignment of frequencies.	Do.
91.8(g)	90.257—Assignment and use of frequencies in the band 72-76 MHz.	Combines applicable provisions in this and other sections.
91.8(h)	90.173(e)—Policies governing the assignment of frequencies.	Minor rewording.
91.8(i)	NA	Deleted.
91.8(j)	Various radio services sections under limitation on number of frequencies assignable.	Minor rewording.
91.8 (k) and (m).	90.177—Protection of certain radio receiving locations.	No change.
91.8(l)	90.261—Assignment and use of frequencies in the band 450-470 MHz for fixed operations.	Do.
91.9	90.179—Cooperative use of radio stations	Action deferred for resolution of docket 18921.
91.50	90.147—Mailing address furnished by licensee	No change.
91.51	90.113—Station authorization required	Minor rewording.
91.52(a)	90.117—Applications for radio station authorization.	Do.
91.52 (b), (c), and (d).	NA	Deleted.
91.53	90.145—Special temporary authority	Minor rewording—added a requirement for eligibility statement.
91.54(a)	90.119—Application forms	Combined with other sections.
91.54(b)	90.127(a)—Filing of applications	Minor rewording—added Chicago filing address.
91.54(c)	90.127(b)—Filing of applications	Combined with other sections.
91.54(d)	90.139—Preliminary processing of applications	No change.
91.54(e)	90.137—Applications for operation at temporary location.	Minor rewording.
91.54(f)	90.129(e)—Supplemental information to be routinely submitted with applications.	Do.
91.55	90.125—Who may sign applications	Paragraph (c) expanded.
91.56(a)(b)	90.119(a)—Application forms	Minor rewording—reference to form 1046 added—eliminate reference to construction permit.
91.56(d)	90.119(d)—Application forms	Minor rewording.
91.56(e)	90.145—Special temporary authority.	Do.
91.56(f)	NA	Requirement deleted.
91.56(g)	90.119(b)—Application forms	Minor rewording.
91.57(a)	90.119(c)—Application forms	Do.
91.57(b)	90.483—Chicago region	No change.
91.58(a)	90.129(1)—Supplemental information to be routinely submitted with applications.	Minor rewording.
91.58(a)(1)	90.173—Policies governing the assignment of frequencies.	Do.
91.58(b)	Various services sections under limitation on number of frequencies assignable.	Do.
91.58(c)	NA	Deleted.
91.58 (d), (e), (f), (g), (h), (i), (j), (k), and (l).	90.129—Supplemental information to be routinely submitted with applications.	Minor rewording—combined with other sections.
91.59	90.143—Grants of applications	Minor rewording.
91.60	90.139—Preliminary processing of applications	Deleted reference to alien restrictions.
91.61	90.131—Amendment or dismissal of applications	No change.
91.62	90.153—Time in which stations must be placed in operation.	Minor rewording—deleted construction permit requirements.
91.63	90.149—License term	Minor rewording and clarification.
91.64	90.135—Modification of license	Rewritten to specify changes.
91.65	NA	Deleted.
91.66	90.155—Discontinuance of station operation	No change.
91.67	90.487—Special provisions relating to frequency assignments in the Chicago region.	Do.
91.101(a)	NA	Deleted.
91.101(b)	90.253—Use of the frequency 4383.8 kHz	Combined with other sections.
91.102	90.213—Frequency tolerance	Do.
91.103(a)	90.207(a)—Types of emission	Combined with other sections—referenced each operation with type of emission permitted.
91.103(b)	90.233—Secondary base/mobile nonvoice signalling operations.	Combined with other sections—deleted requirement for submission of coding system.
91.103(c)	NA	
91.104	90.209—Bandwidth limitations	Combined with other sections.
91.105	90.211—Modulation requirements	Do.
91.106	90.205—Power	Do.

Present section No.	Proposed section and title	Summary of changes proposed
91.107(a)	90.427—Precautions against unauthorized operation.	Minor rewording.
91.107 (b), (c), (d), and (e).	90.429—Control point and dispatch point requirements.	Do.
91.108	90.215—Transmitter measurements	Combined with other sections—minor rewording.
91.109 (a) and (b).	90.203—Type acceptance required	Combined with other sections.
91.109(c)	NA	Deleted.
91.110	90.203—Type acceptance required	Combined with other sections.
91.112	NA	Rearranged by including technical standards in other appropriate sections.
91.113	90.237—Interim provisions for operation of radio teleprinter and radio fascimile devices.	Combined with other sections.
91.114	Subpart L—Authorizations in the band 470–512 MHz (UHF–TV Sharing).	Do.
91.116	NA	Deleted.
91.120	90.239—Interim provisions for operation of automatic vehicle monitoring (AVM) systems.	Combined with other sections.
91.151 (a) and (b).	90.405—Permissible communications	Do.
91.151(c)	90.419—Points of communication	Do.
91.151(d)	90.403—General operating requirements	Do.
91.151(e)	90.407—Communications permitted during emergency situations.	Do.
91.151(f)	90.405—Permissible communications	Do.
91.152	90.425—Station identification	Combined with other sections reorganized.
91.153	90.403—General operating procedure	Minor rewording.
91.154	90.433—Operator license-requirements	Do.
91.155	90.435—Posting of operator license	Reorganized.
91.156	90.437—Posting station license and transmitter identification cards and plates.	Do.
91.157	90.439—Inspection of stations	Minor rewording.
91.158	90.441—Inspection and maintenance of tower marking and associated control equipment.	Do.
91.159	90.449—Answer to a notice of violation	Do.
91.160	90.443—Content of station records 90.445—Form of station records 90.447—Retention of station records	Separated and reorganized with minor rewording.
91.162	90.423—Operations on board aircraft	No change.
91.201	90.503—Eligibility	Minor rewording.
91.202	90.505—Showing required	Do.
91.203	90.507—Limitations on use	Do.
91.204	90.509—Frequencies available for assignment	No change.
91.205	90.511—Interference	Minor rewording.
91.206	90.513—Special provisions	Do.
91.207	90.515—Change or cancellation of authorization without hearing.	No change except title.
91.208	90.517—Report of operation	Minor rewording.
91.251	90.63(a)—Power radio service	Minor rewording—combined with other sections.
91.251 (d) and (e).	90.61—General eligibility	Combined with other sections.
91.252(a)	90.123—Full disclosures	Do.
91.252(b)	90.63(b)(2)—Power radio service	Minor rewording.
91.252(c)	90.63(e)(4)—Power radio service	Do.
91.252(d)	90.63(b)(1)—Power radio service	Do.
91.252(e)	90.211(e)—Modulation requirements	Do.
91.252(f)	90.233—Secondary base/mobile nonvoice signaling operations.	Combined with other sections.
91.253(a)	NA	Not necessary.
91.253 (b) and (c).	90.235—Secondary fixed tone signaling and alarm operations.	Combined with other sections.
91.253(d)	90.421(h)—Operation of mobile units in vehicles not under the control of the licensee.	Minor rewording.
91.254(a)	90.63(c)—Power radio service	Included all frequencies in table. Renumbered limitations.
91.254(b)	do	Renumbered and reworded limitations except as noted for 91.254 (b), (6), (7), (8), (10), (26), (28), (29), (30), and (35).
91.254(b)(6)	NA	Deleted.
91.254(b)(7)	NA	Do.
91.254(b)(8)	90.255—Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz.	Minor rewording—combined with other sections.
91.254(b)(10)	90.263—Substitution of frequencies below 25 MHz.	Minor rewording.
91.254(b)(26)	90.261—Assignment and use of frequencies in the band 450–470 MHz for fixed operations.	Combined with other sections.
91.254(b)(28)	NA	Deleted.
91.254(b)(29)	90.173—Policies governing the assignment of frequencies.	Minor rewording.
91.254(b)(30)	90.249—Control stations	Combined with other sections.
91.254(b)(35)	90.259—Assignment and use of frequencies in the bands 216–220 MHz and 1427–1435 MHz.	Combined with other sections. Minor rewording.
91.255(a)	NA	Deleted.
91.255(b)	90.63(e)(3)—Power radio service	Minor rewording.
91.301	90.65(a)—Petroleum radio service	Minor rewording. Combined with other sections.
91.302(a)	90.123—Full disclosures	Minor rewording.
91.302(b)	90.65(d)(4)—Petroleum radio service	Do.
91.302(c)	90.211(e)—Modulation requirements	Do.
91.302(d)	90.233—Secondary base/mobile nonvoice signalling operations.	Combined with other sections.
91.302(e)	90.65(c)(4)—Petroleum radio service 90.65(e)(4)—Petroleum radio service	Made into frequency limitation and exception to limit on number of frequencies.
91.303(a)	NA	Not necessary.
91.303(b)	90.235—Secondary fixed tone signalling and alarm operation.	Combined with other sections.
91.304(a)	90.65(b)—Petroleum radio service	Included all frequencies in table. Renumbered limitations.
91.304(b)	90.65(c)—Petroleum radio service	Renumbered and reworded limits except as noted for secs. 91.304(b) (4), (5), (6), (8), (27), (29), (31), (32), (33), and (37).
91.304(b)(4)	NA	Deleted.
91.304(b)(5)	NA	Do.
91.304(b)(6)	90.255—Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz.	Minor rewording combined with other sections.
91.304(b)(8)	90.263—Substitution of frequencies below 25 MHz.	Minor rewording.

Present section No.	Proposed section and title	Summary of changes proposed
91.304(b)(27)	90.259—Assignment and use of frequencies in the bands 216–220 MHz and 1427–1435 MHz.	Combined with other sections.
91.304(b)(29)	90.261—Assignment and use of frequencies in the bands 450–470 MHz for fixed operations.	Do.
91.304(b)(31)	NA	Deleted.
91.304(b)(32)	90.173(i)—Policies governing the assignment of frequencies.	Minor rewording.
91.304(b)(33)	90.249—Control stations	Combined with other sections.
91.304(b)(37)	90.259—Assignment and use of frequencies in the bands 216–220 MHz and 1427–1435 MHz.	Do.
91.305(a)	90.65(d)—Petroleum radio service	Minor rewording.
91.305(b)	90.65(d)—Petroleum radio service	Do.
91.351	90.67(a)—Forest products radio service	Minor rewording combined with other sections.
91.352	90.123—Full disclosures	Combined with other sections.
91.353	NA	Not necessary.
91.354(a)	90.67(b)—Forest products radio service	Included all frequencies in table. Renumbered limitations.
91.354(b)	90.67(c)—Forest products radio service	Rewording and renumbered limitations except as noted for secs. 91.354(b) (4), (5), (6), (7), (8), (29), (31), (32), (33), and (35).
91.354(b) (4) and (5).	NA	Deleted.
91.354(b)(6)	90.255—Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz.	Minor rewording. Combined other sections.
91.354(b)(7) and 91.354(b)(35).	90.259—Assignment and use of the frequencies in the bands 216–220 MHz and 1427–1435 MHz.	Minor rewording. Combined with other sections.
91.354(b)(8)	90.263—Substitution of frequencies below 25 MHz	Minor rewording.
91.354(b)(29)	90.261—Assignment and use of frequencies in the bands 450–470 MHz for fixed operations.	Combined with other sections.
91.354(b)(31)	NA	Deleted.
91.354(b)(32)	90.173(i)—Policies governing the assignment of frequencies.	Minor rewording.
91.354(b)(33)	90.249—Control stations	Combined with other sections.
91.355(a)	NA	Deleted.
91.355(b)	90.67(d)—Forest products radio service	Minor rewording.
91.401	90.69(a)—Motion picture radio service	Minor rewording. Combined with other sections.
91.402	90.123—Full disclosures	Combined with other sections.
91.403	NA	Not necessary.
91.404(a)	90.69(b)—Motion picture radio service	Included all frequencies in table. Renumbered limitations.
91.404(b)	90.69(c)—Motion picture radio service	Renumbered and reworded limitations except as noted for secs. 91.404(b)(2), (5), and (12).
91.404(b)(2)	90.263—Substitution of frequencies below 25 MHz	Minor rewording.
91.404(b)(5)	90.255—Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz.	Minor rewording. Combined with other sections.
91.404(b)(12)	90.259—Assignment of frequencies in the bands 216–220 MHz and 1427–1435 MHz.	Do.
91.405(a)	NA	Deleted.
91.405(b)	90.69(b)—Motion picture radio service	Minor rewording.
91.451	90.71(a)—Relay press radio service	Minor rewording. Combined with other sections.
91.452	90.123—Full disclosures	Combined with other sections.
91.454(a)	90.71(b)—Relay press radio service	Included all frequencies in table renumbered limitations.
91.454(b)	90.71(c)—Relay press radio service	Reworded and renumberee limitations except as noted for sec. 91.454(b) (2), (10), (11), (12), and (13).
91.454(b)(2)	90.255—Assignment and use of the frequencies 27.235, 27.245, 27.555, 27.265 and 27.275 MHz.	Minor rewording. Combined with other sections.
91.454(b)(10)	NA	Deleted.
91.454(b)(11)	90.173—(i)Policies governing the assignment of frequencies.	Minor rewording.
91.454(b)(12)	90.249—Control stations	Minor rewording. Combined with other sections.
91.454(b)(13)	90.259—Assignment and use of frequencies in the bands 216–220 MHz and 1427–1735 MHz.	Do.
91.455(a)	NA	Deleted.
91.455(b)	90.71(d)—Relay press radio service	Minor rewording.
91.501	90.73(a)—Special industrial radio service	Combined with other sections.
91.502(a)	90.123—Full disclosures	Do.
91.502(b)	90.73(a)—Special industrial radio service	Incorporated into eligibility paragraph.
91.502(c)	90.83(b)—Special industrial radio service	Only change was to delete unenforceable sec. 91.502(c)(4).
91.502(d)	90.73(a)—Special industrial radio service	Minor rewording. Combined with other sections.
91.503(a)	90.243—Mobile relay stations	Combined with other sections.
91.503(b)	90.257—Assignment and use of frequencies in the band 72–76 MHz.	Minor rewording. Combined with other sections.
91.503(c)	90.73(g)—Special industrial radio service	Minor rewording.
91.504(a)	90.73(e)—Special industrial radio service	Included all frequencies in table renumbered limitations.
91.504(b)	90.73(d)—Special industrial radio service	Reworded and renumbered limitations except as noted for secs. 91.504(b), (6), (7), (8), (10), (26), (27), (28), (29), (30), (33), (34), and (36).
91.504(b) (6) and (7).	NA	Deleted.
91.540(b)(8)	90.255—Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz.	Minor rewording. Combined with other sections.
91.504(b)(10)	90.263—Substitution of frequencies below 25 MHz.	Minor rewording.
91.504(b)(26)	90.261—Assignment and use of frequencies in the band 450–470 MHz for fixed operations.	Combined with other sections.
91.504(b)(27)	NA	Deleted.
91.540(b)(28)	90.173(i)—Policies governing the assignment of frequencies.	Minor rewording.
91.504(b)(29)	90.249—Control stations	Minor rewording. Combined with other sections.
91.504(b) (30) and (36).	90.259—Assignment and use of frequencies in the bands 216–220 MHz and 1247–1435 MHz.	Do.
91.504(b)(33)	90.257—Assignment and use of frequencies in the band 72–76 MHz.	Do.
91.504(b)(34)	NA	Deleted.
91.504(c)	90.73(e)(5)—Special industrial radio service	Minor rewording.
91.504(d)	90.73(e)(4)—Special industrial radio service	Do.
91.506	90.73(e)(3)—Special industrial radio service	Do.
91.551	90.75(a)—Business radio service	Minor rewording. Combined with other sections.
91.552(a)	90.75(a)—Business radio service	Do.
91.552(b)	90.123—Full disclosures	Combined with other sections.

Present section No.	Proposed section and title	Summary of changes proposed
91.552(c)	90.173—Policies governing the assignment of frequencies.	Minor rewording.
91.552(d)	NA	Deleted.
91.552 (f) and (g)	90.75(c)—Business radio service	Minor rewording. Included in frequency limitations.
91.553(a)	90.243—Mobile relay stations	Minor rewording. Combined with other sections.
91.553(c)	90.75(f)—Business radio service	Minor rewording.
91.554(a)	90.75(b)—Business radio service	Included all frequencies in table. Renumbered limitations.
91.554(b)	90.75(c)—Business radio service	Reworded and renumbered limitations except as noted for secs. 91.554(b) (6), (7), (8), (34), (35), (38), (45), and (48).
91.554(b) (6) and (7).	NA	Deleted.
91.554(b) (8)	90.255—Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz.	Minor rewording. Combined with other sections.
91.554(b) (9)	90.249—Control stations	Do.
91.554(b) (34)	NA	Deleted.
91.554(b) (35)	90.173—Policies governing the assignment of frequencies.	Minor rewording.
91.554(b) (38)	90.261—Assignment and use of frequencies in the band 450-470 MHz for fixed operations.	Combined with other sections.
91.554(b) (45) and (48).	90.259—Assignment of frequencies in the bands 216-220 MHz and 1427-1435 MHz.	Minor rewording. Combined with other sections.
91.554 (c) and (d).	90.75(d)—Business radio service	Minor rewording.
91.555	90.217—Exemption from technical standards	No change.
91.556	90.75(d)—Business radio service	Minor rewording.
91.601	90.103—Radiolocation service	Minor rewording. Combined with other sections.
91.602(a)	90.123—Full disclosures	Combined with other sections.
91.602(b)	90.129(c)—Supplemental information to be routinely submitted with applications.	Minor rewording. Combined with other sections.
91.602(c)	NA	Deleted.
91.603(a)	90.203—Type acceptance required	Combined with other sections.
91.603(b)	90.103(a)—Radiolocation service	Minor rewording. Combined with other sections.
91.604(a)	90.103(b)—Radiolocation service	Renumbered limitations.
91.604(b)	90.103(c)—Radiolocation service	Renumbered and reworded limitations.
91.605	90.103(e)—Radiolocation service	No change.
91.606	90.103(e)(7)—Radiolocation service	Minor rewording. Combined with other sections.
91.726 and 91.727.	90.79(a)—Manufacturers radio service	Combined definition and permissible communications with eligibility.
91.728(a)	90.123—Full disclosures	Combined with other sections.
91.728(b)	90.79(b)—Manufacturers radio service	Minor rewording.
91.729(a)	90.243—Mobile relay stations	Minor rewording. Combined with other sections.
91.729(b)	90.79(b)—Manufacturers radio service	Minor rewording.
91.729(d)	90.257—Assignment and use of frequencies in the band 72-76 MHz.	Combined with other sections.
91.730(a)	90.79(c)—Manufacturers radio service	Included all frequencies in table renumbered limitations.
91.730(b)	90.79(d)—Manufacturers radio service	Rewording and renumbered limits except as noted for secs. 91.730(b) (3), (4), (14), (16), (17), (18), (19), and (22).
91.730(b)(3)	90.255—Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz.	Minor rewording. Combined with other sections.
91.730(b)(4)	NA	Deleted.
91.730(b)(14)	90.261—Assignment and use of frequencies in the band 450-470 MHz for fixed operations.	Combined with other sections.
91.730(b)(16)	NA	Deleted.
91.730(b)(17)	90.173(i)—Policies governing the assignment of frenquencies.	Minor rewording.
91.730(b)(18)	90.249—Control stations	Minor rewording. Combined with other sections.
91.730(b)(19) and 91.730(b)(22).	90.259—Assignment and use of frenquencies in the bands 216-220 MHz and 1427-1435 MHz.	Do.
91.751	90.81(a)—Telephone maintenance radio service	Do.
91.752(a)	90.123—Full disclosures	Combined with other sections.
91.752(b) and 91.752(c).	90.81(b)—Telephone maintenance radio service	Minor rewording. Combined with other sections.
91.753	90.243—Mobile relay stations	Do.
91.754(a)	90.81(c)—Telephone maintenance radio service	Included all frenquencies in table. Renumbered limitations.
91.754(b)	90.81(d)—Telephone maintenance radio service	Rewording and renumbered limitations except as noted for secs. 91.754(b) (3), (4), (10), (12), (13), (14), (16), and (18).
91.754(b)(3)	90.255—Assignment and use of the frenquencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz.	Minor rewording. Combined with other sections.
91.754(b)(4)	NA	Deleted.
91.754(b)(10)	90.261—Assignment and use of frequencies in the band 450-470 MHz for fixed operations.	Minor rewording. Combined with other sections.
91.754(b)(12)	NA	Deleted.
91.754(b)(13)	90.173(i)—Policies governing the assignment of frequencies.	Minor rewording.
91.754(b)(14)	90.249—Control stations	Minor rewording. Combined with other sections.
91.754(b)(16) and 91.754(b)(18).	90.259—Assignment and use of frequencies in the bands 216-220 MHz and 1427-1435 MHz.	Do.
93.1	90.1—Basis and purpose	Minor rewording.
93.2	90.415—Prohibited uses	Minor rewording. Combined with other sections.
93.3 and 93.4	90.179—Cooperative use	Awaits resolution of docket 18921.
93.5	90.115—Ineligibility of foreign governments	Minor rewording.
93.6	90.151—Assignment of station authorization	Do.
93.7	90.7—Definitions	Deletions and additions as necessary. Minor reorganization and clarification.
93.8(a)	90.173(a)—Policies governing the assignment of frequencies.	No change.
93.8(b)	90.173(g)—Policies governing the assignment of frequencies.	Minor rewording.
93.8(c)	90.173(c)—Polices governing assignment of frequencies.	Do.
93.8(d)	90.257—Assignment and use of frequencies in the band 72-76 MHz.	Combined with other sections.
93.8(e)	90.173(e)—Policies governing the assignment of frequencies.	Minor rewording.
93.8(h)	Various services sections in the frequency limitations.	Do.
93.9(a)	90.175—Frequency coordination requirements	Do.

Present section No.	Proposed section and title	Summary of changes proposed
93.9(b) and 93.9(c)	90.177—Protection of certain radio receiving locations.	No change.
93.10	90.247—Vehicular repeater stations	Minor rewording. Combined with other sections.
93.50	90.147—Mailing address furnished by licensee	No change.
93.51	90.113—Station authorization required	Minor rewording.
93.52(a)	90.117—Applications for radio station authorizations.	Do.
93.52 (b), (c), and (d).	NA	Deleted.
93.53	90.145—Special temporary authority	Minor rewording added an eligibility statement requirement.
93.54(a)	90.117—Applications for radio station authorization.	Minor rewording. Referenced fee information.
93.54(b)	90.127(a)—Filing of applications	Minor rewording. Added Chicago filing address information.
93.54(c)	90.127(b)—Filing of applications	Minor rewording. Combined with other sections.
93.54(d)	90.139—Preliminary processing of applications	No change.
93.54(e)	90.137—Applications for operation at temporary locations.	Minor rewording.
93.54(f)	90.129(e)—Supplemental information to be routinely submitted with applications.	Do.
93.55	90.125—Who may sign applications	Paragraph (c) expanded.
93.56 (a) and (b).	90.119(a)—Application forms	Minor rewording. Referenced form 1046, eliminated reference to construction permit.
93.56(d)	90.119(h)—Application forms	Minor rewording.
93.56(e)	NA	Deleted.
93.56(f)	90.119(b)—Application forms	Minor rewording.
93.56(g)	90.145—Special temporary authority	Do.
93.57(a)	90.119(c)—Application forms	Do
93.57(b)	90.483—Chicago region	No change.
93.58	90.129—Supplemental information to be routinely submitted with applications.	Minor rewording.
93.59	90.143—Grants of applications	Do.
93.60	90.139—Preliminary processing of applications	Deleted reference of alien restrictions.
93.61	90.131—Amendment or dismissal of applications	No change.
93.62	90.153—Time in which stations must be placed in operation.	Minor rewording. Deleted construction permit.
93.63	90.149—License term	Minor rewording.
93.64	90.135—Modification of license	Rewritten to specify changes requiring applications to be approved.
93.65	90.155—Discontinuance of station operation	No change.
93.67	90.487—Special provisions relating to frequency assignment in the Chicago region.	Do.
93.101(a)(1)	NA	Deleted.
93.101(a)(2)	90.253—Use of the frequency 4383.8 kHz	Combined with other sections.
93.101(b)	90.261—Assignment and use of frequencies in the band 450–470 MHz for fixed operations.	Do.
93.102	90.213—Frequency tolerance	Minor rewording. Combined with other sections.
93.103(a)	90.207(a)—Types of emission	Minor rewording. Referenced each operation with types of emission permitted.
93.103(b)	90.283—Secondary base/mobile nonvoice signalling operations.	Minor rewording. Eliminated requirement for submission of coding systems.
93.103(c)	NA	
93.104	90.209—Bandwidth limitations	Minor rewording. Combined with other sections.
93.105	90.211—Modulation requirements	Do.
93.106	90.205—Power	Do.
93.107(a)	90.427—Precaution against unauthorized operation.	Minor rewording.
93.107 (b), (c), (d) and (e).	90.429—Control point and dispatch point requirements.	Minor rewording and rearrangement.
93.108	90.215—Transmitter measurements	Minor rewording.
93.109	90.203—Type acceptance required	Minor rewording. Combined with other sections.
93.110	do	Do.
93.112	See various frequency tables in subpts. E and F.	Extensive deletions, additions and rearrangement as necessary. Minor rewording and clarification.
93.113	90.237—Interim provisions for operation of radioteleprinter and radio-facsimile devices.	Minor rewording.
93.114	Subpart L—authorization in the band 470–512 MHz (UHF-TV sharing).	Combined with other sections.
93.116		Unnecessary.
93.120	90.239—Interim provisions for operation of automatic vehicle monitoring (AVM) systems.	Minor rewording.
93.151(a)	90.405—Permissible communications	Minor rewording. Combined with other sections.
93.151(b)	90.417—Interstation communications	Combined with other sections.
93.151(c)	90.419—Points of communications	Minor rewording. Combined with other sections.
93.151(c)(4)	90.417—Interstation communications	Combined other sections.
93.151(d)	90.403(a)—General operating procedure	Minor rewording.
93.151(e)	90.407—Communications permitted during emergency situations.	Combined with other sections.
93.151(f)	90.405(c)—Permissible communications	Minor rewording. Combined with other sections.
93.151(g)	90.413—Civil defense communications in the taxicab radio services.	Do.
93.152	90.425—Station identification	Reorganized. Combined with rules for public safety and industrial.
93.153	90.403—General operating procedure	Minor rewording. Combined with other sections.
93.154	90.433—Operator license requirement	Minor rewording.
93.155	90.425—Station identification	Do.
93.156	90.437—Posting station licenses and transmitter identification cards or plates.	Do.
93.157	90.439—Inspection of stations	No change.
93.158	90.441—Inspection and maintenance of tower marking and associated control equipment.	Do.
93.159	90.449—Answer to a notice of violation	Minor rewording.
93.160	90.443—Content of station records	Separated and reorganized; Minor rewording.
	90.445—Form of station records	Do.
	90.447—Retention of station records	Do.
93.161	90.527—Land transportation industries communications emergency plan (LATICEP).	No change.
93.162 and 93.163.		

Present section No.	Proposed section and title	Summary of changes proposed
93.164	90.423—Operations on board aircraft	Minor rewording.
93.201	90.503—Eligibility	Do.
93.202	90.505—Showing required	Do.
93.203	90.507—Limitations on use	Do.
93.204(a)	90.509—Frequencies available for assignment	Do.
93.204(b)	Various land transportation radio services under additional frequencies available, or limitation on number of frequencies assignable.	
93.205	90.511—Interference	Do.
93.206	90.513—Special provisions	Do.
93.207	90.515—Change or cancellation of authorization without hearing.	No change except title.
93.208	90.517—Report of operation	Minor rewording.
93.251(a)	90.89(a)—Motor carrier radio service	Minor rewording. Combined with other sections.
93.251(b)	90.123—Full disclosures	Combined with other sections.
93.252	90.89 (b) and (c)—Motor carrier radio service	Placed frequencies in table form. Minor rewording of limitations.
93.253(a)	90.261—Assignment and use of frequencies in the band 450–470 MHz for fixed operations.	Minor rewording. Combined with other sections.
93.253(b)	90.257—Assignment and use of frequencies in the band 72–76.	Do.
93.253(d)	NA	Deleted.
93.253(e)	90.89(e)(2)—Motor carrier radio service	Minor rewording.
93.254	90.255—Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz.	Minor rewording. Combined with other sections.
93.255	NA	Deleted.
93.351(a)	90.91(a)—Railroad radio service	Minor rewording. Combined with other sections.
93.351(b)	90.123—Full disclosures	Combined with other sections.
93.352 (a), (e), and (f).	90.91 (c) and (d)—Railroad radio service	Placed frequencies in table form. Minor rewording of limitations.
93.352(b)	90.257—Assignment and use of frequencies in the band 72–76 MHz.	Minor rewording. Combined with other sections.
93.352(d)	90.249—Control stations	Do.
93.352(e)	90.91(e)—Railroad radio service	Minor rewording.
93.353(a)	90.261—Assignment and use of frequencies 450–470 MHz for fixed operations.	Minor rewording. Combined with other sections.
93.353(b)	90.257—Assignment and use of frequencies in the band 72–76 MHz.	Do.
93.353(c)	90.91(c)—Railroad radio service	Included in frequency table. Minor rewording of limitation.
93.353(d)	NA	Deleted.
93.353(e)	90.91(e)(2)—Railroad radio service	Minor rewording.
93.353(f)	90.91(e)—Railroad radio service	Do.
93.355	90.243—Mobile relay stations 90.245—Fixed relay stations 90.247—Vehicular repeater stations 90.249—Control stations	Relay, repeater and control uses separated under specific sections with minor rewording and clarification.
93.356	90.255—Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz.	Minor rewording. Combined with other sections.
93.357(a)	90.91(b)—Railroad radio service	Minor rewording.
93.357(b)	90.421—Operation of mobile units in vehicles not under the control of the licensee.	Minor rewording. Combined with other sections.
93.352(c)	90.91(d) (3) and (d)(4)—Railroad radio service	Incorporated as assignment limitations on the appropriate frequencies. Minor rewording.
93.357(d)	90.91(b)—Railroad radio service	No change.
93.401(a)	90.93(a)—Taxicab radio service	Minor rewording. Combined with other sections.
93.401(b)	90.123—Full disclosures	Combined with other sections.
93.402	90.93 (b) and (c)—Taxicab radio service	Placed frequencies in table form. Minor rewording of limitations.
93.403	NA	Deleted.
93.404	90.255 Assignment and use of frequencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz.	Minor rewording. Combined with other sections.
93.405	90.412—Civil defense communications in the taxicab radio service.	Minor rewording.
93.501(a)	90.95(a)—Automobile emergency radio service	Minor rewording. Combined with other sections.
93.501(b)	90.123—Full disclosures	Combined with other sections.
93.502(a)	90.405—Permissible communications	Minor rewording. Combined with other sections.
93.502(b)	90.95(a)—Automobile emergency radio service	Minor rewording. Combined with eligibility provisions.
93.502(c)	90.95—Automobile emergency radio service	Minor rewording.
93.503	90.95 (c) and (d)—Automobile emergency radio service.	Placed frequencies in table form. Minor rewording of limitations.
93.504	90.225—Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz.	Minor rewording. Combined with other sections.
93.506	90.421—Operation of mobile units in vehicles not under the control of the licensee.	Do.

ATTACHMENT B

A new Part 90 in Volume V of the Commission's Rules is proposed to be added as follows:

PART 90—PRIVATE LAND MOBILE RADIO SERVICES

Subpart A—General Information

Sec.
90.1 Basis and purpose.
90.3 Organization and applicability of the rules.
90.5 Other applicable rule parts.
90.7 Definitions.

Subpart B—Public Safety Radio Services

90.15 Scope.
90.17 Local government radio service.
90.19 Police radio service.
90.21 Fire radio service.
90.23 Highway maintenance radio service.
90.25 Forestry-conservation radio service.

Subpart C—Special Emergency Radio Service

90.33 Scope.
90.35 Medical services.
90.37 Rescue organizations.
90.39 Veterinarians.
90.41 Disaster relief organizations.
90.43 School buses.
90.45 Beach patrols.
90.47 Establishment in isolated areas.
90.49 Communications standby facilities.
90.51 Emergency repair of public communications facilities.
90.53 Frequencies available.
90.55 Paging operations.

Subpart D—Industrial Radio Services

Sec.
90.59 Scope.
90.61 General eligibility.
90.63 Power radio service.
90.65 Petroleum radio service.
90.67 Forest products radio service.
90.69 Motion picture radio service.
90.71 Relay press radio service.
90.73 Special industrial radio service.
90.75 Business radio service.
90.79 Manufacturers radio service.
90.81 Telephone maintenance radio service.

Subpart E—Land Transportation Radio Services

90.85 Scope.
90.87 General eligibility.
90.89 Motor carrier radio service.
90.91 Railroad radio service.
90.93 Taxicab radio service.
90.95 Automobile emergency radio service.

Subpart F—Radiolocation Service

90.101 Scope.
90.103 Radiolocation service.

Subpart G—Applications and Authorizations

90.111 Scope.
90.113 Station authorization required.
90.115 Ineligibility of foreign governments.
90.117 Applications for radio station authorizations.
90.119 Application forms.
90.121 Canadian registration.
90.123 Full disclosures.
90.125 Who may sign applications.
90.127 Filing of applications.
90.129 Supplemental information to be routinely submitted with applications.
90.131 Amendment or dismissal of applications.
90.135 Modifications of license.
90.137 Applications for operation at temporary locations.
90.139 Preliminary processing of applications.
90.141 Resubmitted applications.
90.143 Grants of applications.
90.145 Special temporary authority.
90.147 Mailing address furnished by licensee.
90.149 License term.
90.151 Requests for waiver.
90.152 Assignment of station authorization.
90.155 Time in which station must be placed in operation.
90.157 Discontinuance of station operation.

Subpart H—General Policies Governing the Inter-system Assignment, Coordination, and Use of Frequencies

90.171 Scope.
90.173 Policies governing the assignment of frequencies.
90.175 Frequency coordination requirements.
90.177 Protection of certain radio receiving locations.
90.179 Cooperative use of radio stations.

Subpart I—General Technical Standards

90.201 Scope.
90.203 Type acceptance required.
90.205 Power.
90.207 Types of emission.
90.209 Bandwidth limitations.
90.211 Modulation requirements.
90.213 Frequency tolerance.
90.215 Transmitter measurements.
90.217 Exemption from technical standards.

Subpart J—Non-Voice and Other Specialized Operations

90.231 Scope.
90.233 Secondary base/mobile non-voice signalling operations.
90.235 Secondary fixed tone signalling and alarm operations.

Sec.
90.237 Interim provisions for operation of radioteleprinter and radio-facsimile devices.
90.239 Interim provisions for operation of automatic vehicle monitoring (AVM) systems.
90.241 Radio call box operations.
90.243 Mobile relay stations.
90.245 Fixed relay stations.
90.247 Vehicular repeater stations.
90.249 Control stations.

Subpart K—Standards for Special Frequencies or Frequency Bands

90.251 Scope.
90.253 Use of frequency 4383.8 kHz.
90.255 Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz.
90.257 Assignment and use of frequencies in the band 72–76 MHz.
90.259 Assignment and use of frequencies in the 216–220 MHz and 1427–1435 MHz.
90.261 Assignment and use of frequencies in the band 450–470 MHz for fixed operations.
90.263 Substitution of frequencies below 25 MHz.

Subpart L—Authorization in the Band 470–512 MHz (UHF–TV Sharing)

90.301 Scope.
90.303 Availability of frequencies.
90.305 Location of stations.
90.307 Protection criteria.
90.309 Tables and figures.
90.311 Frequencies.
90.313 Frequency loading criteria.
90.315 Special provisions governing use of frequencies in the 488–494 MHz band (TV Channel 17) in the southern Louisiana Offshore zone.

Subpart M—Special Regulations Governing Licensing and Use of Frequencies in the 806–821 MHz and 851–866 MHz Bands

90.351 Scope.
90.353 Definitions.

Applications for Authorizations in the 806–821 MHz and 851–866 MHz Bands

90.355 Eligibility.
90.357 Forms to be used.
90.359 Supplemental information to be furnished by applicants for facilities under this subpart.
90.361 Special limitations on amendment of applications for assignment or transfer of authorizations for radio systems used to provide service to persons other than the licensee.

Policies Governing the Processing of Applications and the Selection and Assignment of Frequencies for Use in the 806–821 MHz and 851–866 MHz Bands

90.363 Processing of applications.
90.365 Selection and assignment of frequencies.
90.367 Limitation on the number of frequencies assignable for conventional systems.
90.369 Other criteria to be applied in assigning channels for use in conventional systems of communication.
90.371 Limitation on the number of frequency pairs assignable for trunked systems and on the number of trunked systems.
90.373 Restriction on licensing manufacturers in the 806–821 MHz and 851–866 MHz bands.

Channel Loading Requirements for Trunked and Conventional Systems Operating in the 806–821 and 851–866 MHz Bands

90.375 Trunked systems loading requirements.
90.377 Conventional systems loading requirements.

Technical Regulations Regarding the Use of Frequencies in the 806–821 MHz and 851–866 MHz Bands

90.379 Limitations on power and antenna height.
90.381 Restrictions on operational fixed stations.
90.383 Acceptability of transmitters for licensing in the 806–821 and 851–866 MHz bands.

Operating Requirements in the 806–821 MHz and 851–866 MHz Bands

90.385 Restrictions and limitations on permissible communications, on use, and on mode of operation.
90.387 Station identification.
90.389 Restriction on interconnection.
90.391 Supplemental reports required of licensees authorized under this subpart.

Other Provisions Governing the Use of the 806–821 MHz and 851–866 MHz Bands

90.393 Special conditions governing the furnishing of radio equipment by licensees.
90.395 Number of systems authorized in a geographical area.
90.397 Special licensing requirements for radio systems used to provide service to persons other than the licensee.

Subpart N—Operating Requirements

90.401 Scope.
90.403 General operating requirements.
90.405 Permissible communications.
90.407 Communications permitted during emergency situations.
90.409 Emergency operation of public safety and special emergency mobile stations at fixed locations.
90.411 Civil defense communications in the public safety and special emergency radio services.
90.413 Civil defense communications in the taxicab radio service.
90.415 Prohibited Uses.
90.417 Interstation communication.
90.419 Points of communication.
90.421 Operation of mobile units in vehicles not under the control of the licensee.
90.423 Operation on board aircraft.
90.425 Station identification.
90.427 Precautions against unauthorized operation.
90.429 Control point and dispatch point requirements.
90.431 Unattended operation.
90.433 Operator license requirements.
90.435 Posting of operator license.
90.437 Posting station licenses and transmitter identification cards or plates.
90.439 Inspection of stations.
90.441 Inspection and maintenance of tower marking and associated control equipment.
90.443 Content of station records.
90.445 Form of station records.
90.447 Retention of station records.
90.449 Answers to a notice of violation.

Subpart O—Chicago Land Mobile Spectrum Management

90.461 Scope.
90.463 Chicago region.
90.465 Applications.
90.467 Special provisions relating to frequency assignments in the Chicago region.

Subpart P—Developmental Operation

Sec.
90.501 Scope.
90.503 Eligibility.
90.505 Showing required.
90.507 Limitations on use.
90.509 Frequencies available for assignment.
90.511 Interference.
90.513 Special provisions.
90.515 Change or cancellation of authorization without hearing.
90.517 Report of operation.

Subpart Q—Emergency Communications Pursuant to the Industrial Communications Emergency Plan (ICEP) and the Land Transportation Industries Communications Emergency Plan (LATICEP)

90.525 Industrial Communications Emergency Plan (ICEP).
90.527 Land Transportation Industries Communications Emergency Plan (LATICEP).

Supplement "A"—Alphabetical index.
Supplement "B"—Combined frequency list.

Subpart A—General Information

§ 90.1 Basis and purpose.

(a) *Basis.* The rules in this part are promulgated under Title II of the Communications Act of 1934, as amended which vests authority in the Federal Communications Commission to regulate radio transmission and to issue licenses for radio stations. All rules in this part are in accordance with applicable treaties and agreements to which the United States is a party.

(b) *Purpose.* This part states the conditions under which radio communications systems may be licensed and used in the Public Safety, Special Emergency, Industrial, Land Transportation, and Radiolocation Radio Services. These rules do not govern radio systems employed by agencies of the Federal government.

§ 90.3 Organization and applicability of the rules.

The Rules in this part are divided in seventeen subparts as follows:

(a) Subpart A contains general information and definitions for use in this part.

(b) Subparts B, C, D, E, and F set forth the radio services governed under this part and include eligibility provisions, listing of frequencies available for each radio service, and special requirements and limitations applicable to a particular radio service.

(c) Subpart G describes the procedures and requirements for filing applications and licensing radio stations under this part.

(d) Subpart H provides requirements for selection of frequencies.

(e) Subpart I contains general technical standards for use of equipment under this part.

(f) Subpart J contains standards for certain specialized uses.

(g) Subpart K contains standards for the use of certain frequencies or frequency bands.

(h) Subpart L contains special regulations for operation in the 470–512 MHz band.

(i) Subpart M contains special regulations for operation in the 806–821 and 851–866 MHz bands.

(j) Subpart N sets forth system operating requirements.

(k) Subpart O contains special regulations for operation in the Chicago Land Mobile Spectrum Management District.

(l) Subpart P provides regulations for the authorization of developmental operations.

(m) Subpart Q contains regulations for emergency operations in the Industrial Radio Services (ICEP), and in the Land Transportation Radio Services (LATICEP).

§ 90.5 Other applicable rule parts.

Other Commission rule parts of importance that may be referred to with respect to licensing and operations in radio services governed under this part include the following:

(a) Part 0 of the Commission's Rules describes the Commission's organization and delegations of authority. This part also lists available Commission publications, and standards and procedures for access to Commission records, and location of Commission Field Offices.

(b) Part 1 includes rules of practice and procedure for adjudicatory proceedings including hearing proceedings, rule making proceedings; procedures for reconsideration and review of the Commission's actions; provisions concerning violation notices and for forfeiture proceedings; and the requirements for environmental impact statements.

(c) Part 2 contains the table of frequency allocations and special requirements in International regulations, agreements, and treaties. This part also contains standards and procedures concerning marketing of radio frequency devices, and for obtaining equipment type acceptance and type approval.

(d) Part 5 contains standards and procedures for obtaining experimental authorizations.

(e) Conditions under which the operations of incidental and restricted radio devices are permitted are in Part 15.

(f) Part 17 contains detailed requirements for construction, marking, and lighting of antenna towers.

(g) Part 18 deals with the operation of industrial, scientific, and medical (ISM) devices that are not intended for radio communication.

(h) Part 94 governs licensing and operation of private operational-fixed radio stations on frequencies above 952 MHz (Microwave).

§ 90.7 Definitions.

Antenna height above average terrain (AAT). Height of the center of the radiating element of the antenna above the average terrain.

Antenna height above sea level. The height of the topmost point of the antenna above mean sea level.

Antenna structure. Structure on which an antenna is mounted.

Assigned frequency. Center of a frequency band assigned to a station.

Assigned frequency band. The frequency band the center of which coincides with the frequency assigned to the station and the width of which equals the necessary bandwidth plus twice the absolute value of the frequency tolerance.

Authorized bandwidth. The frequency band, specified in kilohertz and centered on the carrier frequency containing those frequencies upon which a total of 99 percent of the radiated power appears, extended to include any discrete frequency upon which the power is at least 0.25 percent of the total radiated power.

Automatic Vehicle Monitoring (AVM). The use of non-voice signalling methods from and to vehicles to make known at fixed points the location of the vehicles. AVM systems may also transmit status and instructional messages related to the vehicles involved.

Average terrain. The average elevation of terrain between 2 and 10 miles from the antenna site.

Base station. A station at a specified site authorized to communicate with mobile stations.

Carrier frequency. The frequency of an unmodulated electromegnetic wave.

Channel loading. The number of mobile transmitters authorized to operate on a particular channel within the same service area.

Control point. Any place from which a transmitter's functions may be controlled.

Control station. An Operational Fixed Station, the transmissions of which are used to control automatically the emissions or operation of another radio station at a specified location.

Developmental operation. A specially licensed operation for the purpose of testing concepts in the use of radio appropriate to the radio services governed by this part.

Dispatch point. Any place from which radio messages can be originated under the supervision of a control point.

Effective radiated power (ERP). The power supplied to an antenna multiplied by the relative gain of the antenna in a given direction.

Fixed relay station. A station at a specified site used to communicate with another station at another specified site.

Frequency advisor. An individual or entity that has been recognized by the Commission for the purpose of coordinating the assignment of frequencies, by recommending, to applicants, upon request, appropriate frequencies for which to apply.

Harmful interference. For the purposes of resolving conflicts between stations operating under this part, any emission, radiation, or induction which specifically degrades, obstructs, or interrupts the service provided by such stations.

Interzone station. A fixed station in the Police Radio Service using radio telegraphy (A1 emission) for communications with interzone stations in other zones and with zone stations within the same zone.

Land mobile radio service. A mobile service between base stations and land mobile stations, or between land mobile stations.

Line A. An imaginary line within the U.S., approximately paralleling the U.S.-Canadian border, north of which Commission coordination with Canadian authorities in the assignment of frequencies is generally required. It begins at Aberdeen, Washington, running by great circle arc to the intersection of 48° N., 120° W., then along parallel 48° N., to the intersection of 95° W., thence by great circle arc through the southernmost point of Duluth, Minn., thence by great circle arc to 45° N., to 85° W., thence southward along meridian 85° W., to its intersection with parallel 41° N., 82° W., thence by great circle arc through the southernmost point of Bangor, Maine, thence by great circle arc through the southernmost point of Searsport, Maine, at which point it terminates.

Line C. An imaginary line is Alaska approximately paralleling the border with Canada, East of which Commission coordination with Canadian authorities in the assignment of frequencies is generally required. It begins at the intersection of 70° N., 144° W., thence by great circle arc to the intersection of 60° N., 143° W., thence by great circle arc so as to include all the Alaskan Panhandle.

Mobile relay station. A base station in the mobile service authorized to retransmit automatically on a mobile service frequency communications which originate on the transmitting frequency of the mobile station.

Mobile service. A service of radiocommunication between mobile and base stations, or between mobile stations.

Mobile station. A station in the mobile service intended to be used while in motion or during halts at unspecified points. This includes hand carried transmitters.

Person. An individual, partnership, association, joint stock company, joint venture, trust, corporation, or local government entity.

Radio call box. A transmitter used by the public to request fire, police, medical, road service, or other emergency assistance.

Radiodetermination. The determination of position, or the obtaining of information relating to position, by means of the propagation of radio waves.

Radiofacsimile. A system of radiocommunication for the transmission of fixed images, with or without half-tones, with a view to their reproduction in a permanent form.

Radiolocation. Radiodetermination used for purposes other than those of radionavigation.

Radionavigation. Radiodetermination used for the purposes of naviation, including obstruction warning.

Radio teleprinting. Radio transmissions to a printing telegraphic instrument having a signal-actuated mechanism for automatically printing received messages.

Secondary operation. Radio communications which may not cause interference to operations authorized on a pri-

mary basis and which are not protected from interference from those primary operations.

Signal booster. A device which automatically amplifies and transmits received base station transmissions with no change in frequency or authorized bandwidth.

Station authorization. A license issued by the Commission for the operation of a radio station.

Telecommand. The transmission of non-voice signals for the purpose of remotely controlling a device.

Telemetering (also telemetry). The transmission of non-voice signals for the purpose of automatically indicating or recording measurements at a distance from the measuring instrument.

Vehicular repeater station. A mobile station authorized to retransmit automatically on a mobile service frequency, communications to or from hand-carried mobile units.

Zone station. A fixed station in the Police Radio Service using radio-telegraphy (A–1 emission) for communications with other similar stations in the same zone and with an interzone station in the same zone.

Subpart B—Public Safety Radio Services

§ 90.15 Scope.

The Public Safety Radio Services include the Local Government, Police, Fire, Highway Maintenance and Forestry-Conservation Radio Services. Rules as to eligibility for licensing, frequencies available, and any special requirements as to each of these radio services are set forth in the following sections.

§ 90.17 Local Government Radio Service.

(a) *Eligibility.* Any territory, possession, state, county, city, town, and similar governmental entity, including a district and an authority, but not including a school or park district or authority is eligible to hold authorizations in the Local Government Radio Service to operate radio stations for transmission of communications essential to official activities of the licensee.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Local Government Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section.

Local government radio service frequency table

Frequency or band	Class of station(s)	Limitations
Kilohertz: 2726.	Base or mobile	1
Megahertz:		
37.10	do	2
37.18	do	2
37.26	do	2
39.08	Mobile	2, 3
39.10	Base or mobile	2
39.18	do	2
39.26	do	2
39.58	do	2
39.82	do	2
39.90	do	2
39.98	do	2
45.08	do	
45.12	do	
45.16	do	
45.20	do	
45.24	do	
45.28	do	
45.32	do	
45.36	do	
45.40	do	
45.44	do	
45.48	do	
45.52	do	
45.56	do	
45.60	do	
45.64	do	
46.52	do	
46.54	do	
46.56	do	
46.58	do	
72.00 to 76.00	Operational fixed	4
153.740	Mobile	
153.755	do	
153.785	do	
153.800	do	
153.815	do	
153.845	do	
153.860	do	
153.875	do	
153.905	do	
153.920	do	
153.935	do	
153.965	do	
153.980	do	
153.995	do	
154.025	Base or mobile	
154.040	do	5
154.055	do	5
154.085	do	5
154.100	do	5
154.115	do	5
154.4525 to 154.460	Fixed	6
154.905	Base or mobile	
154.980	do	
154.995	do	
155.025	do	
155.040	do	
155.055	do	
155.085	do	
155.100	do	
155.115	do	
155.145	do	
155.715	do	
155.745	do	
155.760	do	
155.775	do	
155.805	do	
155.820	do	
155.835	do	
155.865	do	
155.880	do	
155.895	do	
155.925	do	
155.940	do	
155.955	do	
155.985	Mobile	
156.000	do	
156.015	do	
158.745	Base and mobile	
158.760	do	
158.775	do	
158.805	do	
158.820	do	
158.835	do	
158.865	Mobile	
158.880	do	
158.895	do	
158.925	do	
158.940	do	
158.955	do	
173.20375	Fixed or mobile	7, 8
173.210	do	8, 9
173.290	do	8, 9
173.29625	do	7, 8
450 to 470	Fixed	10
453.025	Central control, fixed	11
453.050	Base or mobile	12
453.075	Central control, fixed	11
453.100	Base or mobile	12
453.125	Central control, fixed	11
453.150	Base or mobile	12
453.175	Central control, fixed	11
453.200	Base or mobile	12
453.225	do	
453.250	do	13
453.275	do	
453.300	do	13
453.325	do	
453.350	do	13
453.375	do	
453.400	do	13
453.425	do	
453.450	do	12
453.475	do	
453.500	do	12
453.525	do	
453.550	do	12
453.575	do	
453.600	do	12
453.625	do	
453.650	do	12
453.675	do	
453.700	do	12
453.725	do	
453.750	do	12
453.775	do	
453.800	do	12
453.825	do	
453.850	do	12
453.875	do	
453.900	do	12
453.925	do	
453.950	do	12
453.975	do	
458.025	Radio call boxes, fixed	11, 13
458.050	Mobile	12
458.075	Radio call boxes, fixed	11, 13
458.100	Mobile	12
458.125	Radio call boxes, fixed	11, 13
458.150	Mobile	12
458.175	Radio call boxes, fixed	11, 13
458.200	Mobile	12
458.225	do	
458.250	do	12
458.275	do	
458.300	do	12
458.325	do	
458.350	do	12
458.375	do	
458.400	do	12
458.425	do	
458.450	do	12
458.475	do	
458.500	do	12
458.525	do	
458.550	do	12
458.575	do	
458.600	do	12
458.625	do	
458.650	do	12
458.675	do	
458.700	do	12
458.725	do	
458.750	do	12
458.775	do	
458.800	do	12
458.825	do	
458.850	do	12
458.875	do	
458.900	do	12
458.925	do	
458.950	do	12
458.975	do	
470 to 512	Base or mobile	14
806 to 821	Mobile	15
851 to 896	Base or mobile	15
952 and above	Operational fixed	16
1427 to 1435	Operational fixed, base or mobile	17
2450 to 2500	Base or mobile	18
10,550 to 10,680	do	

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) This frequency is shared with the Special Emergency Radio Services and is available for assignment to the official state guard or comparable organization of a state, territory, possession, or the District of Columbia which is shown to be duly created by law and subject to the control of the highest official of the governmental entity involved, and may be used for emergency communications and for essential communications related to training and maintenance of an efficient organization. In addition to base and mobile stations, this frequency may be assigned to fixed stations on a secondary basis to base or mobile stations. Upon a showing of need, the use of a second frequency in the band 2505–3500 kHz may be made available to these organizations through appropriate arrangements with Government agencies for restricted area use on a shared basis with maxi-

mum power input, emission, and hours of operation determined on the basis of the technical conditions involved in using the selected frequency in the particular area.

(2) This frequency is shared with the Police Radio Service.

(3) The maximum output power of any transmitter authorized to operate on this frequency shall not exceed 2 watts. Applicants for this frequency need not demonstrate compliance with the frequency coordination provisions of § 90.175.

(4) The frequencies available for use at operational fixed stations in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(5) This frequency is not available for assignment in this service in Puerto Rico or the Virgin Islands.

(6) This frequency is assignable for fixed stations to provide emergency call box service in accordance with § 90.241(a).

(7) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 2.8 kHz and the maximum frequency deviation may not exceed 2.5 kHz. For AM transmitters the highest modulating frequency may not exceed 2 kHz. The carrier frequency must be maintained within 0.0005 percent, and the authorized bandwidth may not exceed 6 kHz.

(8) This frequency is available on a shared basis with several Industrial Radio Services. On this frequency the maximum power output of the transmitter may not exceed 50 watts for fixed stations and 1 watt for mobile stations. A1, A2, F1, or F2 emission may be authorized, and moble stations used to control remote objects and devices may be operated in the continuous transmit mode. Operational fixed stations communicating with two receiving locations or with three or more receiving locations all of which are located within an angle of azimuth of 160° must employ directional antennas having a front-to-back ratio of at least 20dB. Ominidirectional antennas having unity gain may be employed at other stations.

(9) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 1.7 kHz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1.2 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 3 kHz.

(10) The frequencies available for fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Industrial and Land Transportation Radio Services where they are assigned for land mobile operations.

(11) Available for radio call box communications related to safety on highways in accordance with the provisions of § 90.241(c).

(12) This frequency is available in this service on a shared basis with all other Public-Safety Radio Services.

(13) Available for medical services mobile operations in the Special Emergency Radio Service in accordance with § 90.53(b)(13).

(14) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(15) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(16) Assignment of frequencies for operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(17) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(18) Available only on a shared basis with stations in other services, and subject to no protection from interference from industrial, scientific or medical (ISM) devices.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253.)

(1) Substitution of frequencies available below 25 MHz may be made in accordance with the provisions of § 90.263.

(2) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available in accordance with § 90.263.

(3) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(4) The frequency bands 31.99 to 32.00 MHz, 33.00 to 33.01 MHz, 33.99 to 34.00 MHz, 37.93 to 38.00 MHz, 39.00 to 39.01 MHz, 39.99 to 40.00 MHz and 42.00 to 42.01 MHz, are available for assignment for developmental operation subject to the provisions of Subpart P.

(e) *Limitation on number of frequencies assignable.* Normally only two frequencies or pairs of frequencies in the varied frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with the operation of vehicular repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) The frequency 39.06 MHz may be assigned notwithstanding this limitation.

(3) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequencly bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

§ 90.19 Police Radio Service.

(a) *Eligibility.* Any territory, possession, state, county, city, town, and similar governmental entity including a governmental institution authorized by law to provide its own police protection, is eligible to hold authorizations in the Police Radio Service to operate radio stations for transmission of communications essential to official police activities of the licensee.

(b) *Police zone and interzone stations.* (1) Fixed zone and interzone stations may be authorized in the Police Radio Service. An unlimited number of zone stations may be authorized in a single zone, but only one interzone station will be authorized in any zone. (A zone is normally considered to be a single state.) Request to rezone a state to provide more than one interzone station must be supported by an adequate showing of need based upon the volume of traffic or the necessity for more expeditious handling of traffic. In addition, the request shall include a showing that all licensees of all affected zone stations have been notified and afforded an opportunity to comment on the request.

(2) In addition to the points of communication permitted by § 90.419, zone and interzone stations are authorized to intercommunicate in accordance with the operating procedure prescribed by the Commission. Copies of such prccedure are available from the Secretary, Federal Communications Commission, Washington, D.C. 20554.

(c) *International police radiocommunication.* Police radio licensees which are located in close proximity to the borders of the United States may be authorized to communicate internationally. Request for such authority shall be written and signed and submitted in duplicate. The request shall include information as to the station with which communication will be conducted, and the frequency, power, emission, etc., that will be used. If authorized, such international communication must be conducted in accordance with Article 5 of the Inter-American Radio Agreement, Washington, D.C., 1949 which reads as follows:

Article 5. *Police radio stations.* When the American countries authorize their police radio stations to exchange emergency information by radio with similar stations of another country, the following rules shall be applied:

(a) Only police radio stations located close to the boundaries of contiguous countries shall be allowed to exchange this information.

(b) In general, only important police messages shall be handled, such as those which would lose their value because of slowness and time limitations if sent on other communcation systems.

(c) Frequencies used for radiotelephone communications with mobile police units shall not be used for radiotelegraph communications.

(d) Radiotelephone communications shall be conducted only on frequencies assigned for radiotelephony.

(e) Radiotelegraph communications shall be conducted on the following frequencies: 2804 kHz calling, 2808 kHz working, 2812 kHz working, 5195 kHz day calling, 5135 kHz day working, 5140 kHz day working.

(f) The characteristics of police radio stations authorized to exchange information shall be notified to the International Telecommunication Union, Geneva, Switzerland.

(g) The abbreviations contained in Appendix 9 of the Atlantic City Radio Regulations shall be used to the greatest possible extent. Service indications are as follows: "P", priority, for messages that are to be sent immediately, regardless of the number of other messages, are to be transmitted in the order of receipt.

(h) The message shall contain the preamble, address, text, and signature, as follows:

Preamble. The preamble of the message shall consist of the following: the serial number preceded by the letters "NR", service indications, as appropriate; the group count according to standard cable count system; the letters "CK", followed by numerals indicating the number of words contained in the text of the message; office and country of origin (not abbreviations); day, month, and hour of filing;

Address. The address must be as complete as possible and shall include the name of the addressee with any supplementary particulars necessary for immediate delivery of the message;

Text. The text may be either in plain language or code;

Signature. The signature shall include the name and title of the person originating the message.

(d) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Police Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (e) of this section:

Police radio service frequency table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
1610	Base or mobile	1, 2, 3
1618	do	1, 2, 3
1626	do	1, 2, 3
1634	do	1, 2, 3
1642	do	1, 2, 3
1650	do	2, 3
1658	do	2, 3
1666	do	2, 3
1674	do	2, 3
1682	do	2, 3
1690	do	1, 2, 3
1698	do	1, 2, 3
1706	do	1, 2, 3
1714	do	2, 3
1722	do	2, 3
1730	do	2, 3
2326	do	1, 2
2366	do	1, 2
[illegible]	do	2
2390	do	1, 2
2400	do	[illegible]
2414	do	2
[illegible]	do	2
2430	do	2
2442	do	2
2450	do	2
2458	do	2
2466	do	[illegible]
2474	do	2
2482	do	2
2490	do	2, 3
2804	Fixed	4
2808	do	4
2812	do	4
5135	do	4, 6
5140	do	4
5195	do	4, 6
7480	do	4, 7, 8
7805	do	4, 7
7935	do	4, 7
Megahertz:		
37.02	Mobile	
37.04	Base or mobile	
37.06	do	
37.08	do	
37.10	do	9
37.12	do	
37.14	do	
37.16	do	
37.18	do	9
37.20	do	
37.22	do	
37.24	do	
37.26	do	9
37.28	do	
37.30	do	
37.32	do	
37.34	Mobile	
37.36	Base or mobile	
37.38	Mobile	
37.40	Base or mobile	
37.42	Mobile	
39.02	Base or mobile	
39.04	do	
39.06	do	9, 10
39.08	do	
39.10	do	9
39.12	do	
39.14	do	
39.16	do	
39.18	do	9
39.20	do	
39.22	do	
39.24	do	
39.26	Mobile	
39.28	Base or mobile	
39.30	Mobile	
39.32	Base or mobile	
39.34	Mobile	
39.36	Base or mobile	
39.38	Mobile	
39.40	Base or mobile	
39.42	do	
39.44	do	
39.46	do	11
39.48	do	
39.50	do	9
39.52	do	
39.54	do	
39.56	do	
39.58	do	9
39.60	do	
39.62	do	
39.64	do	
39.66	Mobile	
39.68	Base or mobile	
39.70	Mobile	
39.72	Base or mobile	
39.74	Mobile	
39.76	Base or mobile	
39.78	Mobile	
39.80	Base or mobile	
39.82	do	9
39.84	do	
[illegible]	do	
[illegible]	do	
[illegible]	do	9
[illegible]	do	
39.94	do	
[illegible]	do	
[illegible]	do	9
42.02	do	2, 3, 12
42.04	do	2, 3, 12
42.06	do	2, 3, 12
42.08	do	2, 3, 12
42.10	do	2, 3, 12
42.12	do	2, 3, 12
42.14	do	2, 3, 12
42.16	do	2, 3, 12
42.18	Mobile	2, 12
42.20	do	2, 12
42.22	do	2, 12
42.24	do	2, 12
42.26	do	2, 12
42.28	do	2, 12
42.30	do	2, 12
42.32	Base or mobile	2, 3, 12
42.34	do	2, 3, 12
42.36	do	2, 3, 12
42.38	do	2, 3, 12
42.40	do	2, 3, 12
42.42	do	2, 3, 12
42.44	do	2, 3, 12
42.46	do	2, 3, 12
42.48	do	2, 3, 12
42.50	do	2, 3, 12
42.52	do	2, 3, 12
42.54	do	2, 3, 12
42.56	do	2, 3, 12
42.58	do	2, 3, 12
42.60	do	2, 3, 12
42.62	do	2, 3, 12
42.64	do	2, 3, 12
42.66	Mobile	2, 12
42.68	do	2, 12
42.70	do	2, 12
42.72	do	2, 12
42.74	do	2, 12
42.76	do	2, 12
42.78	do	2, 12
42.80	Base or mobile	2, 3, 12
42.82	do	2, 3, 12
42.84	do	2, 3, 12
42.86	do	2, 3, 12
42.88	do	2, 3, 12
42.90	do	2, 3, 12
42.92	do	2, 3, 12
42.94	do	2, 3, 12
44.62	do	2, 3, 12
44.66	do	2, 3, 12
44.70	do	2, 3, 12
44.74	do	2, 3, 12
44.78	Mobile	2, 12
44.82	do	2, 12
44.86	do	2, 12
44.90	do	2, 12
44.94	Base or mobile	2, 3, 12
44.98	do	2, 3, 12
45.02	do	2, 3, 12
45.06	do	2, 3, 12
45.10	do	
45.14	do	
45.18	do	
45.22	do	
45.26	Mobile	
45.30	do	
45.34	do	
45.38	do	
45.42	Base or mobile	
45.46	do	
45.50	do	
45.54	do	
45.58	do	
45.62	do	
45.66	do	
45.70	do	
45.74	Mobile	
45.78	do	
[illegible]	do	
45.86	Base or mobile	11
45.90	do	
45.94	do	
45.98	do	
46.02	do	
72.00–76.00	Operational fixed	13
154.650	Mobile	
154.665	Base or mobile	12
154.680	do	12
154.695	do	12
154.710	Mobile	
154.725	Base or mobile	
154.740	do	
154.755	do	
154.770	Mobile	
154.785	Base or mobile	
154.800	do	
154.815	do	
154.830	Mobile	
154.845	Base or mobile	
154.860	do	
154.875	do	
154.890	Mobile	
154.905	Base or mobile	12
154.920	do	12
154.935	do	12
154.950	Mobile	
155.01	Base or mobile	
155.07	do	
155.13	do	
155.19	do	
155.25	do	
155.31	do	
155.370	do	
155.415	do	
155.430	do	
155.445	do	12
155.460	do	12
155.475	do	14
155.490	do	
155.505	do	12
155.520	do	
155.535	do	
155.550	do	
155.565	do	
155.580	do	
155.595	do	
155.610	do	
155.625	do	
155.640	do	
155.655	do	
155.670	do	
155.685	do	
155.700	do	
155.730	do	
155.79	do	
155.85	Mobile	
155.91	do	
155.97	do	
156.03	do	
156.09	do	
156.15	do	
156.210	Base or mobile	
158.730	do	
158.790	do	
158.850	do	
158.910	Mobile	
158.970	do	
159.030	do	
159.090	Base or mobile	
159.150	do	
159.210	do	

Frequency or band	Class of station(s)	Limitations
Megahertz:		
450–470	Fixed	15
453.050	Base or mobile	16
453.100	do	16
453.150	do	16
453.200	do	16
453.250	do	16
453.300	do	16
453.350	do	16
453.400	do	16
453.450	do	16
453.500	do	16
453.550	do	16
453.600	do	16
453.650	do	16
453.700	do	16
453.750	do	16
453.800	do	16
453.850	do	16
453.900	do	16
453.950	do	16
458.050	Mobile	16
458.100	do	16
458.150	do	16
458.200	do	16
458.250	do	16
458.300	do	16
458.350	do	16
458.400	do	16
458.450	do	16
458.500	do	16
458.550	do	16
458.600	do	16
458.650	do	16
458.700	do	16
458.750	do	16
458.800	do	16
458.850	do	16
458.900	do	16
458.950	do	16
460.025	Base or mobile	
460.050	do	
460.075	do	
460.100	do	
460.125	do	
460.150	do	
460.175	do	
460.200	do	
460.225	do	
460.250	do	
460.275	do	
460.300	do	
460.325	do	
460.350	do	
460.375	do	
460.400	do	
460.425	do	
460.450	do	
460.475	do	
460.500	do	
460.525	do	17, 18, 20
460.550	do	17, 18, 20
462.950	do	17, 19
462.975	do	17, 19
465.025	Mobile	
465.050	do	
465.075	do	
465.100	do	
465.125	do	
465.150	do	
465.175	do	
465.200	Mobile	
465.225	do	
465.250	do	
465.275	do	
465.300	do	
465.325	do	
465.350	do	
465.375	do	
465.400	do	
465.425	do	
465.450	do	
465.475	do	
465.500	do	
465.525	do	17, 18, 20
465.550	do	17, 18, 20
467.950	do	17, 19
467.975	do	17, 19
470–512	Base or mobile	21
806–821	Mobile	22
851–866	Base or mobile	22
952 and above	Operational fixed	23
1427 to 1435	Operational fixed, base or mobile	24
2450 to 2500	Base or mobile	25
10,550 to 10,680	do	

(e) Explanation of assignment limitations appearing in the frequency table of paragraph (d) of this section:

(1) The use of this frequency is on a secondary basis to any Canadian station.

(2) The frequency is available for assignment only in accordance with a geographical assignment plan.

(3) Base stations operating on this frequency and rendering service to state police mobile units may be authorized to use a maximum plate input power to the final radio frequency stage in excess of the maximum indicated in § 90.205 but not in excess of 10,000 watts: *Provided*, That such operation is secondary to other stations.

(4) This frequency is available for assignment to zone and interzone stations for use with type A1 emission only and a maximum plate input power of 1000 watts to the final radio frequency stage of the transmitter.

(5) This frequency may be assigned to fixed stations in Alaska for point-to-point radiotelephone communications, using type A3 emission with a maximum plate input power of 1000 watts to the final radio frequency stage of the transmitter, on a secondary basis to zone and interzone stations and further subject to the condition that no harmful interference is caused to the service of any station, which in the discretion of the Commission may have priority on the frequency with which interference results.

(6) This frequency is authorized for use as a calling frequency; however, the transmission of operating signals or a single short radio telegram is permissible on a secondary basis to any calling signals.

(7) This frequency may be used only during that period of time between 2 hours after local sunrise and 2 hours before local sunset.

(8) This frequency may be assigned to fixed stations in the Police Radio Service in Alaska for point-to-point radiotelephone communication, using type A3 emission and a maximum output power of 750 watts.

(9) This frequency is shared with the Local Government Radio Service.

(10) The maximum output power of any transmitter authorized to operate on this frequency, after June 1, 1956, shall not exceed two watts. Licensees holding a valid authorization as of June 1, 1956, for base or mobile station operation on this frequency, with a power in excess of two watts, may continue to be authorized for such operation without regard to this power limitation.

(11) This frequency is reserved for assignment to stations for intersystem operations only: *Provided, however*, That licensees holding a valid authorization to use this frequency for local base or mobile operations as of June 1, 1956, may continue to be authorized for such use.

(12) This frequency is reserved primarily for assignment to state police licensees. Assignment to other police licensees will be made only where the frequency is required for coordinated operation with the state police system to which the frequency is assigned. Any request for such assignment must be supported by a statement from the state police system concerned indicating that the assignment is necessary for coordination of police activities.

(13) The frequencies available for use at operational fixed stations in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies, are shared with other services and are available only in accordance with the provisions of § 90.257.

(14) This frequency is available nationwide for use in police emergency communications networks operated under statewide law enforcement emergency communications plans. Operations authorized on this frequency which are not in accordance with this limitation may continue until January 1, 1985.

(15) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Industrial and Land Transportation Radio Services where they are assigned for land mobile operations.

(16) This frequency is available in this service on a shared basis with all other Public-Safety Radio Services.

(17) This frequency is available for assignment, without regard to the coordination requirement of § 90.175 for the development and operation of non-voice systems. F2, F4, or F9 emission will be authorized for use of this frequency, except that telemetry, telecommand, or automatic vehicle location systems may not be operated. F3 emission may also be authorized when required to supplement non-voice operation. Transmitters type-accepted under this part for use of F3 emission may also be used for non-voice operation on this frequency, provided that the audio keying signal is passed through the low pass audio frequency filter required in the transmitter for F3 emission, and provided further that the transmitter is so adjusted and operated that the instantaneous frequency deviation does not exceed the maximum value allowed for F3 emission. Operation on this frequency is exempted from the station identification requirements of § 90.425.

(18) This frequency is shared until March 1, 1986, with Fire Radio Service Licensees authorized for its use prior to July 16, 1974, and operations in the Police Radio Service are on a secondary basis to such Fire Radio Service use.

(19) This frequency is available in this service only for systems licensed in this service prior to April 16, 1976, until March 1, 1986. Use of this frequency is shared with, and is on a primary basis to, operations by licensees in the Special Emergency Radio Service.

(20) Until March 1, 1986, use of this frequency is on a secondary basis to Special Emergency licensees authorized prior to April 16, 1976.

(21) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(22) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(23) Assignment of frequencies for operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(24) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(25) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific or medical (ISM) devices.

(f) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253.)

(1) Substitution of frequencies available below 25 MHz may be made in accordance with the provisions of § 90.263.

(2) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available in accordance with § 90.255.

(3) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(4) The frequency bands 31.99 to 32.00 MHz, 33.00 to 33.01 MHz, 33.99 to 34.00 MHz, 37.93 to 38.00 MHz, 39.00 to 39.01 MHz, 33.99 to 40.00 MHz and 42.00 to 42.01 MHz are available for assignment for developmental operation subject to the provisions of Subpart P.

(g) *Limitation on number of frequencies assignable.* Normally only one base and one mobile station frequency, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of vehicular repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) The frequency 39.06 MHz may be assigned notwithstanding this limitation.

(3) A licensee may use, without specific authorization from the Commission any mobile service frequency between 40 MHz and 952 MHz listed in paragraph (d) of this section for communications in connection with physical surveillance, stakeouts, raids, and other such activities. Such use shall be on a secondary basis to operations of licensees regularly authorized on the assigned frequencies. The maximum power that may be used for such communications is 2 watts into the antenna. Other provisions of this part, including the requirements for station identification, shall apply.

(4) In addition to the frequencies assigned for mobile service operation, one base station frequency above 152 MHz may be assigned as a common frequency to all licensees in a particular area to permit intersystem communication between base stations or mobile stations or both. This frequency use will not be authorized in any area where all available frequencies are required for independent systems.

(5) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

§ 90.21 Fire Radio Service.

(a) *Eligibility.* Any territory, possession, state, county, city, town, or similar governmental entity, and persons or organizations charged with specific fire protection activities are eligible to hold authorizations in the Fire Radio Service to operate radio stations for transmission of communications essential to official fire activities of the licensee. Applications from persons or organizations other than governmental entities must be accompanied by a statement from the governmental entity having legal jurisdiction over the area to be served, supporting the request.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Fire Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Frequency or band	Class of station(s)	Limitations
Kilogram:		
1630	Base or mobile	
Megahertz:		
[illegible]	Mobile or fixed	1
[illegible]44	Base or mobile	
33.46	Mobile	
33.48	Base or mobile	
33.50	Mobile	
33.52	Base or mobile	
[illegible]54	Mobile	
33.56	Base or mobile	
[illegible]58	Mobile	
[illegible]60	Base or mobile	
33.62	Mobile	
33.64	Base or mobile	
[illegible]66	Mobile	
33.68	Base or mobile	
33.70	do	
33.72	do	
33.74	do	
33.76	do	
33.78	do	
33.80	do	
[illegible]82	do	
33.84	do	
33.86	do	
33.88	do	
33.90	do	
[illegible]92	do	
[illegible]94	do	
33.96	do	
33.98	do	
45.88	do	2
46.06	do	
46.08	do	
46.10	do	
46.12	do	
46.14	do	
46.16	do	
46.18	do	
46.20	do	
46.22	Mobile	
46.24	do	
46.26	do	
46.28	do	
46.30	Mobile or fixed	1
46.32	Mobile	
46.34	do	
46.36	Base or mobile	
46.38	do	
46.40	do	
46.42	do	
46.44	do	
46.46	do	
46.48	do	
46.50	do	
72.00 to 76.00	Operational fixed	3
153.77	Mobile	
153.83	Mobile or fixed	1
153.890	Mobile	
153.950	do	
154.010	do	
154.070	do	4

Frequency or band	Class of station(s)	Limitations
Megahertz:		
154.130	Base or mobile	4
154.145	do	4
154.160	do	4
154.175	do	4
154.190	do	4
154.205	do	4
154.220	do	4
154.235	do	4
154.250	do	4
154.265	do	2, 4
154.280	do	2, 4
154.295	do	2, 4
154.310	do	4
154.325	do	4
154.340	do	4
154.355	do	4
154.370	do	4
154.385	Base or mobile	4
154.400	do	4
154.415	do	4
154.430	do	4
154.445	do	4
166.250	do	5
170.150	do	5
450.470	Fixed	6
453.050	Base or mobile	7
453.100	do	7
453.150	do	7
453.200	do	7
453.250	do	7
453.300	do	7
453.350	do	7
453.400	do	7
453.450	do	7
453.500	do	7
453.550	do	7
453.600	do	7
453.650	do	7
453.700	do	7
453.750	do	7
453.800	do	7
453.850	do	7
453.900	do	7
453.950	do	7
458.050	Mobile	7
458.100	do	7
458.150	do	7
458.200	do	7
458.250	do	7
458.300	do	7
458.350	do	7
458.400	do	7
458.450	do	7
458.500	do	7
458.550	do	7
458.600	do	7
458.650	do	7
458.700	do	7
458.750	do	7
458.800	do	7
458.850	do	7
458.900	do	7
458.950	do	7
460.525	do	8
460.550	do	8
460.575	do	
460.600	do	
465.525	do	8
465.550	do	8
465.575	do	
465.600	do	
465.625	do	
470.512	Base or mobile	1
806.821	Mobile	10
851.866	Base or mobile	10
952 and above.	Operational fixed	1
1427 to 1435	Operational fixed, base or mobile.	
2450 to 2500	Base or mobile	
10,550 to 10,680	do	

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) The maximum output power of any transmitter authorized to operate on this frequency shall not exceed 10 watts.

(2) This frequency is reserved for assignment to stations in this service for inter-system operations only and these operations must be primarily base-mobile communications.

(3) The frequencies available for use at operational fixed stations in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other

services and are available only in accordance with the provisions of § 90.257.

(4) This frequency is not available for assignment to stations in this service in Puerto Rico or the Virgin Islands.

(5) This frequency may be assigned to stations in the Fire Radio Service, only at points within 240 km. (150 mi.) of New York, N.Y.

(6) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Industrial and Land Transportation Radio Services where they are assigned for land mobile operations.

(7) This frequency is available in this service on a shared basis with all other Public-Safety Radio Services.

(8) This frequency is available to Fire Radio Service licensees authorized prior to July 16, 1974, until March 1, 1986, on a shared basis with, and primary to operations in the Police Radio Service.

(9) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(10) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(11) Assignment of frequencies for operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(12) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(13) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253).

(1) Substitution of frequencies available below 25 MHz may be made in accordance with the provisions of § 90.263.

(2) The frequencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz are available in accordance with § 90.255.

(3) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(4) The frequency bands 31.99 to 32.00 MHz, 33.00 to 33.01 Mhz, 33.99 to 34.00 MHz, 37.93 to 38.00 MHz, 39.00 to 39.01 MHz, 39.99 to 40.00 MHz and 42.00 to 42.01 MHz are available for assignment for developmental operation subject to the provisions of Subpart P.

(e) *Limitation on number of frequencies assignable.* Normally only two frequencies or pairs of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with the operation of vehicular repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) The assignment of an additional frequency or frequencies may be authorized notwithstanding this limitation for common, intra-county, intra-fire-district, or intrastate fire coordination operations. The frequency or frequencies requested must be in accordance with a frequency utilization plan, for the area involved, on file with the Commission.

(3) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

§ 90.23 Highway Maintenance Radio Service.

(a) *Eligibility.* Any territory, possession, state, county, city, town, and similar governmental entity is eligible to hold authorizations in the Highway Maintenance Radio Service to operate stations for transmission of communications essential to official highway activities of the licensee.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Highway Maintenance Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Highway maintenance radio service frequency table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
33.02	Base or mobile	1
33.06	do	1
33.10	do	1
37.90	do	1
37.92	do	
37.94	do	1
37.96	do	
37.98	do	1
45.68	do	
45.72	do	
45.76	do	
45.80	do	
45.84	do	
47.02	do	2
47.04	do	2
47.06	do	2
47.08	do	2
47.10	do	2
47.12	do	2
47.14	do	2
47.16	do	2
47.18	do	2
47.20	do	2
47.22	do	2
47.24	do	2
47.26	do	2
47.28	do	2
47.30	do	2
47.32	do	2
47.34	do	2
47.36	do	2
47.38	do	2
47.40	do	2
72.00 to 76.00	Operational fixed	3
150.995	Base or mobile	4
151.010	do	4
151.025	do	4
151.040	do	4
151.055	do	4
151.070	do	4
151.085	do	4
151.100	do	4
151.115	do	4
151.130	do	4
156.045	Mobile	
156.060	do	
156.075	do	
156.105	Base or mobile	
156.120	do	
156.135	do	
156.165	do	8
156.180	do	5
156.195	do	5
156.225	do	5
156.240	do	8
157.050	do	8
157.110	do	6
158.985	Mobile	5
159.000	do	5
159.015	do	5
159.045	do	5
159.060	do	5
159.075	do	5
159.105	Base or mobile	5
159.120	do	5
159.135	do	8
159.165	do	5
159.180	do	
159.195	do	
450.470	Fixed	7
453.050	Base or mobile	8
453.100	do	8
453.150	do	8
453.200	do	8
453.250	do	8
453.300	do	8
453.350	do	8
453.400	do	8
453.450	do	8
453.500	do	8
453.550	do	8
453.600	do	8
453.650	do	8
453.700	Base or mobile	9
453.750	do	8
453.800	do	8
453.850	do	8
453.900	do	8
453.950	do	8
458.050	Mobile	8
458.100	do	8
458.150	do	8
458.200	do	8
458.250	do	8
458.300	do	8
458.350	do	8
458.400	do	8
458.450	do	8
458.500	do	8
458.550	do	8
458.600	do	8
458.650	do	8
458.700	do	8
458.750	do	8
458.800	do	8
458.850	do	8
458.900	do	8
458.950	do	8
470–512	Base or mobile	9
806–821	Mobile	10
851–866	Base or mobile	10
952 and above.	Operational fixed	11
1427–1435	Operational fixed, base or mobile.	12
2450–2500	Base or mobile	13
10,550 to 10,680.	do	

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) This frequency is shared with the Special Emergency Radio Service.

(2) This frequency will be assigned only in accordance with a geographical assignment plan and is reserved primarily for assignment to Highway Maintenance systems operated by states. The use of this frequency by other Highway Maintenance licensees will be authorized only where such use is necessary to coordinate activities with the particular state to which the frequency is assigned. Any request for such use must be supported by a statement from the state concerned.

(3) The frequencies available for use at operational fixed stations in the band

72–76 MHz are listed in § 90.257(a)(1). These frequencies, are shared with other services and are available only in accordance with the provisions of § 90.257.

(4) This frequency is not available for assignment to stations in the Highway Maintenance Radio Service located in Puerto Rico and the Virgin Islands.

(5) This frequency is reserved for assignment for use in highway maintenance systems operated by licensees other than states.

(6) This frequency is only assigned to Highway Maintenance stations licensed for its use prior to April 28, 1952. Such use may continue on a secondary basis to any government or non-government radio operation.

(7) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Industrial and Land Transportation Radio Services where they are assigned for land mobile operations.

(8) This frequency is available in this service on a shared basis with all other Public-Safety Radio Services.

(9) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(10) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(11) Assignment of frequencies for operational-fixed stations in the bands 952 and above is governed by Part 94 of this Chapter.

(12) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(13) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253).

(1) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available in accordance with § 90.255.

(2) The frequency bands 31.99 to 32.00 MHz, 33.00 to 33.01 MHz, 33.00 to 33.01 MHz, 33.99 to 34.00 MHz, 37.93 to 38.00 39.00 to 39.01 MHz, 39.99 to 40.00 MHz and 42.00 to 42.01 MHz are available for assignment for developmental operation subject to the provisions of Subpart P.

(3) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(e) *Limitation on number of frequencies assignable.* Normally only two frequencies or pairs of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with the operation of vehicular repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

§ 90.25 Forestry-Conservation Radio Service.

(a) *Eligibility.* Any territory, possession, state, county, city, town, and similar governmental entity, or persons or organizations charged with specific forestry-conservation activities are eligible to hold authorizations in the Forestry-Conservation Radio Service to operate radio stations for transmission of communications essential to official forestry-conservation activities of the licensee. Application from persons or organizations other than governmental entities must be accompanied by a statement from the governmental entity having legal jurisdiction over the area to be served, supporting the request.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Forestry-Conservation Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Forestry-conservation radio service frequency table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
2212	Base or mobile	1
2226	do	1
2236	do	1
2241	do	1
Megahertz:		
30.86	do	2
30.90	do	2
30.94	do	2
30.98	do	2
31.02	do	2
31.06	do	2, 3, 4
31.10	do	2, 3, 4
31.14	do	2, 3, 4
31.18	do	3, 4
31.22	do	3, 4
31.26	do	3, 4
31.30	do	3, 4
31.34	do	3, 4
31.38	do	3, 4
31.42	do	3, 4
31.46	do	3, 4
31.50	do	3, 4
31.54	do	3, 4
31.58	do	3, 4
31.62	do	3, 4
31.66	do	3, 4
31.70	do	3, 4
31.74	do	3, 4
31.78	do	3, 4
31.82	do	3, 4
31.86	do	3, 4
31.90	do	3, 4
31.94	do	3, 4
31.98	do	3, 4
44.64	do	4
44.68	do	4
44.72	do	4
44.76	do	4
44.80	do	4
44.84	do	4
44.88	do	4
44.92	do	4
44.96	do	4
45.00	do	4
45.04	do	4
72.00 to 76.00	Operational fixed	5
151.145	Base or mobile	6
151.160	do	6
151.175	do	6
151.190	do	6
151.205	do	6
151.220	do	6
151.235	do	6
151.250	do	6
151.265	do	6
151.280	do	6
151.295	do	6
151.310	do	6
151.325	do	6
151.340	do	6
151.355	do	6
151.370	do	6
151.385	do	6
151.400	do	6
151.415	do	6
151.430	do	6
151.445	do	6
151.460	do	6
151.475	do	6
151.490	do	6, 7
159.225	do	8
159.240	do	8
159.255	do	8
159.270	do	8
159.285	do	8
159.300	do	8
159.315	do	8
159.330	do	8
159.345	do	8
159.360	do	8
159.375	do	8
159.390	do	8
159.405	do	8
159.420	do	8
159.435	do	8
159.450	do	8
159.465	do	8
170.425	do	4, 9, 10
170.475	do	4, 9, 11
170.575	do	4, 9, 10
171.425	do	4, 9, 11
171.475	do	4, 9, 12
171.575	do	4, 9, 11
172.225	do	4, 9, 10
172.275	do	4, 11, 12
172.375	do	4, 9, 10
450–470	Fixed	13
453.050	Base or mobile	14
453.100	do	14
453.150	do	14
453.200	do	14
453.250	do	14
453.300	do	14
453.350	do	14
453.400	do	14
453.450	do	14
453.500	do	14
453.550	do	14
453.600	do	14
453.650	do	14
453.700	do	14
453.750	do	14
453.800	do	14
453.850	do	14
453.900	do	14
453.950	do	14
458.050	Mobile	14
458.100	do	14
458.150	do	14
458.200	do	14
458.250	do	14
458.300	do	14
458.350	do	14
458.400	do	14
458.450	do	14
458.500	do	14
458.550	do	14
458.600	do	14
458.650	do	14
458.700	do	14
458.750	do	14
458.800	do	14
458.850	do	14
458.900	do	14
458.950	do	14
470.512	Base or mobile	14
806 to 821	Mobile	16
851 to 866	Base or Mobile	16
952 and above	Operational fixed	17
1427 to 1435	Operational fixed, base or mobile	18
2450 to 2500	Base or mobile	19
10,550 to 10,680	do	20

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) The use of this frequency is on a secondary basis to any Canadian station.

(2) This frequency is shared with the Motor Carrier Radio Service.

(3) This frequency is available for assignment only in accordance with a geographical assignment plan. This frequency may be used for conservation activities on a secondary basis to any station using the frequency for forest fire prevention, detection and suppression.

(4) This frequency is reserved primarily for assignment to state licensees. Assignments to other licensees will be made only where the frequency is required for coordinated operation with the state system to which the frequency is assigned. Any request for such assignment must be supported by a statement from the state system concerned, indicating that the assignment is necessary for coordination of activities.

(5) The frequencies available for use at operational-fixed stations in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(6) This frequency is not available for assignment to stations in this service located in Puerto Rico or the Virgin Islands.

(7) This frequency is shared with stations in the Special Industrial Radio Service and evidence of interservice coordination is required.

(8) This frequency is shared with the Special Industrial Radio Service in Puerto Rico and the Virgin Islands. All applications for the assignment of a new frequency or to change existing facilities in such a manner as to require frequency coordination as specified in § 90.175 for stations in Puerto Rico or the Virgin Islands, shall be accompanied by evidence of interservice frequency coordination.

(9) This frequency will be assigned only to licensees directly responsible for the prevention, detection, and suppression of forest fires, on a secondary basis to any U.S. Government station.

(10) This frequency will be assigned for use only in areas west of the Mississippi River.

(11) This frequency will be assigned for use only in areas east of the Mississippi.

(12) In addition to agencies responsible for forest fire prevention, detection and suppression, this frequency may be assigned to conservation agencies which do not have forest fire responsibilities on a secondary basis to any U.S. Government stations, *Provided*, That such assignment is necessary to permit mobile relay operation by such agencies.

(13) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Industrial and Land Transportation Radio Services where they are assigned for land mobile operations.

(14) This frequency is available in this service on a shared basis with all other Public Safety Services.

(15) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(16) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(17) Assignment of frequencies for operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(18) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(19) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253).

(1) Substitution of frequencies available below 25 MHz may be made in accordance with the provisions of § 90.263.

(2) The frequencies 27.235, 27.245, 27.255, 27–265, and 27.275 MHz are available in accordance with § 90.255.

(3) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(4) The frequency bands 31.99 to 32.00 MHz, 33.00 to 33.01 MHz, 33.99 to 34.00 MHz, 37.93 to 38.00 MHz, 39.00 to 39.01 MHz, 39.99 to 40.00 MHz and 42.00 to 42.01 MHz are available for assignment for developmental operation subject to the provisions of Subpart P.

(e) *Limitation on number of frequencies assignable.* Normally only two frequencies or pairs of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with the operation of vehicular repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

Subpart C—Special Emergency Radio Service

§ 90.33 Scope.

The Special Emergency Radio Service covers the licensing of the radio communications of the following categories of activities: Medical services, rescue organizations, veterinarians, disaster relief organizations, school buses, beach patrols, establishments in isolated areas, communications standby facilities, and emergency repair of public communications facilities. Rules as to eligibility for licensing, permissible communication, classes and number of stations, and any special requirements as to each of these categories are set forth in the following sections. Frequencies available for these categories of services are shown in a separate frequency table.

§ 90.35 Medical services.

(a) *Eligiblity.* The following persons are eligible to hold authorization to operate radio stations for the delivery or rendition of medical services to the public and on a secondary basis, for transmission of messages related to the efficient administration of organizations and facilities engaged in medical services operations.

(1) Hospital establishments that offer services, facilities and beds for use beyond 24 hours in rendering medical treatment.

(2) Institutions and organizations regularly engaged in providing medical services through clinics, public health facilities, and similar establishments.

(3) Ambulance companies regularly engaged in providing medical ambulance services.

(4) Rescue organizations for the limited purpose of participation in providing medical services.

(5) Associations comprised of two or more of the organizations eligible under paragraph (a) (1), (2), (3), and (4) of this section, for the purpose of active participation in and direct operational control of the medical services communication activities of such organizations.

(6) Physicians, schools of medicine, and oral surgeons, which may include an association of physicians or oral surgeons in a locality (such as a county, city, or metropolitan area), which is chartered by a national or state association of physicians or oral surgeons, provided that such association shall be subject fully to the provisions of § 90.179 governing the cooperative use of radio stations and provided further, that stations authorized to such associations may be used only for messages related to the medical activities of its members. This does not include associations whose primary purpose is to provide a communications service.

(7) Governmental entities and governmental agencies for their own medical activities.

(8) Governmental entities and governmental agencies for providing medical services communications to other eligible persons through direct participation in and direct operational control of the system, such as through central dispatch service.

(b) *Communications plans.* In the event that the applicant is participating in an area-wide medical communications plan, the plan may be filed with the application. A listing of current plans will be made available upon request to applicants and other interested parties in connection with the development of radio communications systems. In addition, copies of plans will be maintained for public inspection in the license records

of the Commission's Washington, D.C. offices.

(c) *Class and number of stations available.* (1) The number and classes of stations which may be authorized will depend upon the frequencies selected and the demonstrated system requirements.

(2) Subject to the provisions of § 90.421, communication units of a mobile station authorized under this section may be installed in a vehicle or be hand-carried for use by any person with whom cooperation or coordination is required for medical services activities.

§ 90.37 Rescue organizations.

(a) *Eligibility.* Persons or organizations operating a rescue squad are eligible to hold authorizations to operate radio stations for transmission of messages pertaining to the safety of life or property and urgent messages necessary for the rendition of an efficient emergency rescue service.

(b) *Class and number of stations available.* Each rescue squad will be authorized to operate one base station, and a number of mobile units (excluding hand carried mobile units) not exceeding the number of vehicles actually used in emergency rescue operations. In addition, each rescue squad will be authorized to operate a number of hand carried mobile units not exceeding two such units for each radio equipped vehicle actually used in emergency rescue operations.

§ 90.39 Veterinarians.

(a) *Eligibility.* A veterinarian, veterinary clinic, or a school of veterinary medicine is eligible to hold authorizations to operate radio stations for the transmission of messages pertaining to the care and treatment of animals.

(b) *Class and number of stations available.* Each licensee may be authorized to operate one base station and two mobile units. Additional base stations or mobile units will be authorized only on a showing of need.

§ 90.41 Disaster relief organizations.

(a) *Eligibility.* Organizations established for disaster relief purposes having an emergency radio communications plan are eligible to hold authorizations to operate radio stations for the transmission of communications relating to the safety of life or property, the establishment and maintenance of temporary relief facilities, and the alleviation of the emergency situation during periods of actual or impending emergency, or disaster, and until substantially normal conditions are restored.

(b) *Special eligibility showing.* The initial application from a disaster relief organization shall be accompanied by a copy of the charter or other authority under which the organization was established and a copy of its communications plan. The plan shall fully describe the operation of the radio facilities and describe the method of integration into other communications facilities which normally would be available to assist in the alleviation of the emergency condition.

(c) *Class and number of stations available.* Disaster relief organizations may be authorized to operate the number of base, mobile, and fixed stations required.

§ 90.43 School buses.

(a) *Eligibility.* Persons or organizations operating school buses on a regular basis over regular routes are eligible to hold authorizations ot operate radio stations for the transmission of messages pertaining to either the efficient operation of the school bus service or the safety or general welfare of the students they are engaged in transporting.

(b) *Class and number of stations available.* Each school bus operator may be authorized to operate one base station and a number of mobile units not in excess of the total of the number of buses and maintenance vehicles regularly engaged in the school bus operation. Additional base stations or mobile units will be authorized only in exceptional circumstances when the applicant can show a specific need.

§ 90.45 Beach patrols.

(a) *Eligibility.* Persons or organizations operating beach patrols having responsibility for life-saving activities are eligible to hold authorizations to operate radio stations for the transmission of messages required for the safety of life or property.

(b) *Class and number of stations available.* Eligibles in this category will be authorized to operate base, mobile, and fixed stations in the stated area served by the beach patrol. The number of such stations requested shall be justified.

§ 90.47 Establishment in isolated areas.

(a) *Eligibility.* Persons or organizations maintaining establishment in isolated areas where public communications facilities are not available and where the use of radio is the only feasible means of establishing communication with a center of population, or other point from which emergency assistance might be obtained if needed, are eligible to hold authorizations to operate radio stations for the transmission of messages only during an actual or impending emergency endangering life, health or property for the transmission of essential communications arising from the emergency. The transmission of routine or non-emergency communications is strictly prohibited.

(b) *Special eligibility showing.* The initial application requesting a station authorization for an establishment in an isolated area shall be accompanied by a statement describing the status of public communication facilities in the area of the applicant's establishment; the results of any attempts the applicant may have made to obtain public communication service, and; in the event radio communications service is to be furnished under subparagraph (d) (2) of this section, a copy of the agreement involved must be submitted.

(c) *Class and number of stations available.* Persons or organizations in this category may be authorized to operate not more than one fixed station at any isolated establishment and not more than one fixed station in a center of population.

(d) *Communication service rendered and received.* (1) The licensee of a station at any establishment in an isolated area shall make the communication facilities of such station available at no charge to any person desiring the transmission of any communication permitted by paragraph (a) of this section.

(2) For the purpose of providing the communications link desired the licensee of a station at an establishment in an isolated area either may be the licensee of a similar station at another location or may obtain communication service under a mutual agreement from the licensee of any station in the Public Safety or Special Emergency Radio Services or any other station which is authorized to communicate with the special emergency fixed station.

§ 90.49 Communications standby facilities.

(a) *Eligibility.* A communications common carrier operating communications circuits that normally carry essential communication of such a nature that their disruption would endanger life or public property is eligible to hold authorizations for standby radio facilities for the transmission of messages only during periods when the normal circuits are inoperative due to circumstances beyond the control of the user. During such periods the radio facilities may be used to transmit any communication which would be carried by the regular circuits.

(b) *Special eligibility showing.* Initial applications for authorization to operate a standby radio facility must include a statement describing radio communication facilities desired, the proposed method of operation, a description of the messages normally being carried, and an explanation of how their disruption will will endanger life or public property.

(c) *Class and number of stations available.* Eligibles in this category may be authorized to operate the number of fixed stations as standby radio facilities required. Any such fixed station may be licensed for operation either at a specified location or for itinerant operation. In the latter case the area of desired operation must be specified by the applicant.

§ 90.51 Emergency repair of public communications facilities.

(a) *Eligibility.* Communications common carriers are eligible in this service for radio facilities to be used in effecting expeditious repairs to interruption of public communications facilities where such interruptions have resulted in disabling intercity circuits or service to a multiplicity of subscribers in a general area. Stations authorized under this section may be used only when no other means of communication is readily available, for the transmission of messages relating to the safety of life and property and messages which are necessary for the efficient restoration of the public communication facilities which have been disrupted.

(b) *Class and number of stations available.* Eligibles in this category may be authorized to operate the number of base, mobile and fixed stations required.

§ 90.53 Frequencies available.

(a) The following table indicates frequencies available for assignment to stations in the Special Emergency Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (b) of this section. (Frequencies below 450 MHz indicated for base or mobile stations may be authorized to fixed stations on a secondary basis to stations in the mobile service):

Special emergency radio service frequency table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
2000–3000	Fixed	1
2726	Base or mobile	2
3201	do	
Megahertz:		
33.02	do	3
33.04	do	
33.06	do	3
33.08	do	
33.10	do	3
35.64	Base	4
35.66	do	4
37.90	Base or mobile	3
37.94	do	3
37.98	do	3
43.64	Base	4
43.68	do	4
45.92	Base or mobile	
45.96	do	
46.00	do	
46.04	do	
47.42	do	5
47.46	do	
47.50	do	
47.54	do	
47.58	do	
47.62	do	
47.66	do	
72.00 to 76.00	Operational fixed	6
150.775	Mobile	7
150.790	do	7
152.0075	Base	4
155.160	Base or mobile	8
155.175	do	8
155.205	do	4
155.220	do	
155.235	do	8
155.265	do	8
155.280	do	
155.295	do	8
155.325	do	8, 9
155.340	do	10
155.355	do	8, 9
155.385	do	8, 9
155.400	do	8, 9
157.450	Base	4, 11
163.250	do	4
450 to 470	Fixed	12
458.025	Mobile	13, 14
458.075	do	13, 14
458.125	do	13, 14
458.175	do	13, 14
460.525	Base or mobile	16, 17
460.550	do	16, 17
462.950	do	16, 18
462.975	do	16, 18
463.000	do	14, 15, 19
463.025	do	14, 15, 19
463.050	do	14, 15, 19
463.075	do	14, 15, 20
463.100	do	14, 15, 20
463.125	do	14, 15, 20
463.150	do	14, 15, 20
463.175	do	14, 15, 20
465.525	Mobile	16, 17
465.550	do	16, 17
467.950	do	16, 18
462.975	do	16, 18
468.000	do	14, 15, 16, 18
468.025	do	14, 15, 19
468.050	do	14, 15, 19
468.075	do	14, 15, 20
468.100	do	14, 15, 20
468.125	do	14, 15, 20
468.150	do	14, 15, 20
468.175	do	14, 15, 20
806 to 821	do	21
851 to 866	Base or mobile	21
952 and above	Operational fixed	22
1427 to 1435	Operational fixed, base or mobile	23
2450 to 2500	Base or mobile	24
10,550 to 10,680	do	

(b) Explanation of assignment limitations appearing in the frequency table of paragraph (a) of this section:

(1) Appropriate frequencies in the band 2000–3000 kHz which are designated in Part 83 of this chapter as available to Public Ship Stations for telephone communications with Public Coast Stations may be assigned on a secondary basis to Special Emergency fixed stations for communication with Public Coast Stations only, provided such stations are located in the United States and the following conditions are met:

(i) That such fixed station is established pursuant to the eligibility provisions of § 90.47 and that the isolated area involved is an island or other location not more than 300 statute miles (480 km) removed from the desired point of communication and isolated from that point by water.

(ii) That evidence is submitted showing that an arrangement has been made with the coast station licensee for the handling of emergency communications permitted by § 81.302(b) and § 90.47(d) of this Chapter.

(iii) That operation of the Special Emergency fixed station shall at no time conflict with any provision of Part 83 of this chapter and further, that such operation in general shall conform to the practices employed by Public Ship Stations for radiotelephone communication with the same Public Coast Station.

(2) This frequency is shared with the Local Government Radio Service where it is available for State Guard operations.

(3) This frequency is shared with the Highway Maintenance Radio Service.

(4) This frequency will be assigned only for one-way paging communications to mobile receivers. Transmissions for the purpose of activating or controlling remote objects on this frequency are not authorized.

(5) This frequency is reserved for assignment only to national organizations eligible for disaster relief operation under § 90.41.

(6) The frequencies available for use at operational fixed stations in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies, are shared with other services and are available only in accordance with the provisions of § 90.257.

(7) This frequency may be authorized only for voice transmission from a portable (hand-held unit) that is not airborne, to an ambulance or other emergency vehicle for automatic retransmission (vehicular repeater) on a regular mobile frequency to a base station facility. Operation on this frequency is limited to 2.5 watts output power.

(8) Any application for use of this frequency shall be accompanied by a signed statement that all licensees in other radio services who operate on a frequency 15 kHz removed and are located 16 to 56 km. (10–35 mi.) from the proposed base station have been notified of the applicant's intent to file, together with an acceptable engineering report indicating that harmful interference to the operation of existing stations will not be caused. In no instance will an application be granted in this service where the distance between the proposed station and existing base stations is less than 16 km. (10 mi.).

(9) This frequency is assignable only to those hospitals described in § 90.35 (a)(1) and to those ambulance companies which need to communicate with a hospital authorized on this frequency, while providing an ambulance service.

(10) This frequency is authorized for use under § 90.35(a) for the rendition and delivery of medical services, and may be designated by common consent as an inter-system mutual assistance frequency under an area-wide medical communications plan.

(11) Operations on this frequency are limited to 30 watts transmitter output power.

(12) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Industrial and Land-Transportation Radio Service where they are assigned for land mobile operations.

(13) This frequency is authorized for use under § 90.35(a) for telemetry or voice transmission with maximum transmitter output power of 1 watt from a portable telemetering unit to an ambulance for automatic retransmission (vehicular repeater) to a hospital or other medical care facility. This frequency is also available in the Local Government Radio Service for highway radio call box operations. (See § 90.17 (b) and (c)(11).)

(14) The continuous carrier mode of operation may be used for telemetry transmission on this frequency.

(15) For applications for new radio systems received after August 15, 1974, the eight frequency pairs listed below will only be assigned in a block for shared operations under § 90.35(a) subject to the following:

(i) For uniformity in usage, these frequency pairs may be referred to by channel name as follows:

Frequencies base and mobile	Mobile only (Megahertz)	Channel name
Megahertz:		
463.000	468.000	MED-1
463.025	468.025	MED-2
463.050	468.050	MED-3
463.075	468.075	MED-4
463.100	468.100	MED-5
463.125	468.125	MED-6
463.150	468.150	MED-7
463.175	468.175	MED-8

(ii) Except as provided in subparagraphs (v) and (vi) of this paragraph, mobile or portable stations must employ equipment which is both wired and

equipped to transmit/receive, respectively, on each of these eight frequency pairs with transmitters operated on the 468 MHz frequencies.

(iii) Except as provided in subparagraph (vi) of this paragraph, base or control stations must employe equipment which is both wired and equipped to transmit/receive, respectively, on at least four (three, if bio-medical telemetry operation is not employed in the system) of these eight pairs.

(iv) Multi-channel equipment requirement for use of these frequency pairs are intended to afford capability for alternating use of the individual frequencies, and ability to conduct simultaneous operations is not required. These requirements may be met in a single equipment unit or in any combination of equipment units suitable to a licensee's operations. The multi-channel requirements may be satisfied by several single-channel base stations in a mobile relay system provided that each control station can access all of the base stations and that any mobile unit located anywhere in the area of coverage can activate each of the base frequencies involved.

(v) Portable (hand-held) units operated with a maximum output power 2.5 watt are exempted from the multi-channel equipment requirements specifitd in subparagraph (ii) in this paragraph.

(vi) Stations located in areas above line A, as defined in § 90.7, will be required to meet multi-channel equipment requirements only for those frequencies up to the number specified in subparagraph (ii) and (iii) of this paragraph which have been assigned to the licensee after coordination with Canada in accordance with the applicable U.S.-Canada agreement.

(16) This frequency is primarily authorized for use under § 90.35(a) in the dispatch of medical-care vehicles and personnel for the rendition or delivery of medical services. This frequency may also be assigned for intra-system and inter-system mutual assistance purposes.

(17) This frequency is available in this service only for systems licensed in the service prior to April 16, 1976, until March 1, 1986. Use of this frequency is shared with and is primary to operations in the Police Radio Service.

(18) Until March 1, 1986, use of this frequency is on a secondary basis to Police Radio Service licenses authorized prior to April 16, 1976.

(19) This frequency is primarily authorized for use, under § 90.35(a) for operations in bio-medical telemetry systems. F2, F3, and F9 emissions may be authorized. On a secondary basis, this frequency may be utilized for any other permissible communications consistent with § 90.35.

(20) This frequency is primarily authorized for use under § 90.35(a), for communications between medical facilities vehicles and personnel related to medical supervision and instruction for treatment and transport of patients in the rendition or delivery of medical services. F2 and F3 emissions are authorized. On a secondary basis, this frequency may be utilized for any other permissible communications consistent with § 90.35, including bio-medical telemetry transmissions, and F9 emission may be additionally authorized.

(21) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(22) Assignment of frequencies for operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(23) This frequency band is available in this service subject to the provisions of § 90.259.

(24) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific or medical (ISM) devices.

(c) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253).

(1) Substitution of frequencies available below 25 MHz may be made in accordance with the provisions of § 90.263.

(2) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available in accordance with § 90.255.

(3) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(4) The frequency bands 31.99 to 32.00 MHz, 33.00 to 33.01 MHz, 33.99 to 34.00 MHz, 37.93 to 38.00 MHz, 39.00 to 39.01 MHz, 39.99 to 40.00 MHz and 42.00 to 42.01 MHz are available for assignment for developmental operation subject to the provisions of Subpart P.

(d) *Limitation on number of frequencies assignable.* Normally only one frequency below 450 MHz will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with the operation of vehicular repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) An additional frequency may be assigned for paging operations from those frequencies available under § 90.53(b)(4).

(3) The frequency 155.340 MHz may be assigned as an additional frequency when it is designated as a mutual assistance frequency as provided in § 90.53(b)(10).

(4) Additional frequencies may be assigned for fixed station operations.

(5) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

§ 90.55 Paging Operations.

Paging operations may be authorized in the Special Emergency Radio Service only on those frequencies available in accordance with § 90.53(b)(4). Paging operations on other frequencies authorized prior to August 15, 1974, may continue for the balance of the license term then effective. In addition, such operations, except those on 162.6625 MHz, may be renewed until January 1, 1980, on a secondary basis to regularly authorized operations in the Special Emergency Radio Service. Paging operations authorized on the frequency 162.6625 MHz prior to May 14, 1975, may continue until the end of the license term then effective.

Subpart D—Industrial Radio Services

§ 90.59 Scope.

The Industrial Radio Services include the Power, Petroleum, Forest Products, Motion Picture, Relay Press, Special Industrial, Business, Manufacturers, and Telephone Maintenance Radio Services. Rules as to eligibility for licensing, specific frequencies available, and any special requirements as to each of these radio services are set forth in the following sections.

§ 90.61 General eligibility.

In addition to the eligibility shown in each Industrial Radio Service, eligibility is also provided for any corporation proposing to furnish nonprofit radiocommunication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary provided the party served is regularly engaged in any of the eligibility activities set forth in the particular service involved. Eligibility is also provided, except in the Business Radio Service, for a nonprofit corporation or association that is organized for the purpose of furnishing a radiocommunication service to persons actually engaged in any of the eligibility activities set forth in the particular service involved subject to the cooperative use provisions of § 90.179.

§ 90.63 Power Radio Service.

(a) *Eligibility.* Persons primarily engaged in any of the following activities are eligible to hold authorizations in the Power Radio Service to operate radio stations for transmission of communications essential to such activities of the licensee:

(1) The generation, transmission, or distribution of electrical energy for use by the general public or by the members of a cooperative organization.

(2) The distribution of manufactured or natural gas by means of pipe line, for use by the general public or by the members of a cooperative organization, or, in a combination of that activity with the production, transmission or storage of manufactured or natural gas preparatory to such distribution.

(3) The distribution of steam by means of pipe line or, of water by means of pipe line, canal, or open ditch, for use by the general public or by the members

of a cooperative organization, or in a combination of that activity with the collection, transmission, storage, or purification of water or the generation of steam preparatory to such distribution.

(4) The providing of a supporting service by a corporation directly related to activities of its parent corporation, of another subsidiary of the same parent, or of its own subsidiary, where the party served is regularly engaged in any of the eligibility activities set forth in this section.

(b) *Special use of service.* (1) Radio facilities licensed to an electric power entity, in addition to being used primarily for the installation and maintenance of the electric power system, may also be used for the installation and maintenance of any other wireline facilities where such facilities employ in whole or in part the same pole line or duct distribution system as that of the electric power entity and where the licensee has the responsibility to maintain such additional wireline facilities through common ownership or contractual arrangement.

(2) Persons licensed under the provisions of subparagraph (a)(2) of this section may utilize their radio facilities in conjunction with the supplying of liquefied petroleum gas to consumers in areas beyond gas distribution pipe lines.

(c) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Power Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (d) of this section:

Power radio service frequency table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
2292	Base or mobile	1
2308	do	1
4637.5	do	1
Megahertz:		
27.46	Base or mobile	
27.48	do	
27.50	do	
27.52	do	
27.54	do	
27.56	do	
27.58	do	
27.60	Base, mobile or operational fixed	1
27.62	Base or mobile	
27.64	do	
27.66	do	
27.68	do	
27.70	do	
27.72	do	
27.74	do	
27.76	do	
27.78	do	
27.80	do	
27.82	do	
27.84	Operational fixed, base or mobile	2
27.86	Base or mobile	
27.70	do	
27.72	do	
27.74	do	
27.76	do	
27.78	do	
27.80	do	
27.82	do	
27.84	do	
27.86	do	
27.88	do	
27.90	do	
27.92	do	
27.94	do	
27.96	do	
27.98	do	
48.00	do	
48.02	do	
48.04	do	
48.06	do	
48.08	do	
48.10	do	
48.12	do	
48.14	do	
48.16	do	
48.18	do	
48.20	do	
48.22	do	
48.24	do	
48.26	do	
48.28	do	
48.30	do	
48.32	do	
48.34	do	
48.36	do	
48.38	do	
48.40	do	
48.42	do	
48.44	do	
48.46	do	
48.48	do	
48.50	do	
48.52	do	
48.54	do	
72–76	Operational fixed	1
153.410	Base or mobile	
153.425	do	4
153.440	do	5
153.455	do	4
153.470	do	
153.485	do	4
153.500	do	5
153.515	do	4
153.530	do	
153.545	do	4
153.560	do	5
153.575	do	4
153.590	do	
153.605	do	4
153.620	do	5
153.635	do	4
153.650	do	
153.665	do	4
153.680	do	5
153.695	do	
153.710	do	
153.725	do	
154.490 to 154.4975	Fixed or mobile	6, 7
158.130	Base or mobile	
158.145	do	8
158.160	do	9
158.175	do	8
158.190	do	
158.205	do	8
158.220	do	9
158.235	do	8
158.250	do	
158.265	do	8
169.425	Operational fixed	10
169.450	do	10
169.475	do	10
169.500	do	10
169.525	do	10
170.225	do	10
170.250	do	10
170.275	do	10
170.300	do	10
170.325	do	10
171.025	do	10
171.050	do	10
171.075	do	10
171.100	do	10
171.125	do	10
171.825	do	10
171.850	do	10
171.875	do	10
171.900	do	10
171.925	do	10
173.20875	Fixed or mobile	7, 11
173.21	do	11, 13
173.25	Base or mobile	9
173.30	do	9
173.35	do	9
173.39	Fixed or mobile	11, 12
173.39625	do	7, 11
216–220	Base or mobile	13
406.125	Operational fixed	10
406.175	do	10
406.675	do	10
406.725	do	10
412.625	do	10
412.675	do	10
412.725	do	10
412.775	do	10
450–470	Fixed	14
451.025	Base or mobile	
451.050	do	
451.075	do	
451.100	do	
451.125	do	
451.150	do	
451.175	do	15
451.200	do	
451.225	do	15
451.250	do	
451.275	do	15
451.375	do	15
451.425	do	15
451.475	do	15
451.525	do	15
451.575	do	15
451.625	do	15
451.675	do	15
456.025	Mobile	
456.050	do	
456.075	do	
456.100	do	
456.125	do	
456.150	do	
456.175	do	15
456.200	do	
456.225	do	15
456.250	do	
456.275	do	15
456.375	do	15
456.425	do	15
456.475	do	15
456.525	do	15
456.575	do	15
456.625	do	15
456.675	do	15
462.475	Base or mobile	15
462.525	do	15
467.475	Mobile	15
467.525	do	15
470 to 512	Base or mobile	16
806 to 821	Mobile	17
851 to 866	Base or mobile	17
962 and above	Operational fixed	18
1427 to 1435	Base, mobile or operational fixed	13
2450 to 2500	Base or mobile	19
8400 to 8500	do	20
10,550 to 10,680	do	

(d) Explanation of assignment limitations appearing in the frequency tabulation of paragraph (c) of this section:

(1) Frequencies below 25 MHz will be assigned to base or mobile stations in this service only upon a satisfactory showing that, from a safety of life standpoint, frequencies above 25 MHz will not meet the operational requirements of the applicant.

(2) This frequency may be assigned only to stations operating in an interconnected or coordinated utility system in accordance with an operational communications plan which sets forth all points of communications. Authorizations at variance with an established operational communications plan will be made only on a secondary basis.

(3) The frequencies available for use at operational fixed stations in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(4) This frequency is shared with the Forest Products and Petroleum Radio Services in the States of Arkansas, Louisiana, Oklahoma, and Texas.

(5) This frequency is not available for assignment in this service in the States of Arkansas, Louisiana, Oklahoma, and Texas. In these states, this frequency is available to the Petroleum and Forest Products Radio Services.

(6) This frequency is available primarily for assignment to multiple address fixed stations employing omnidirectional antennas used for Power Utility peak load shaving and shedding and to mobile stations used for the remote control of objects and devices. The

maximum power that may be authorized to fixed stations is 300 watts output, and the maximum power that may be authorized for mobile stations is 1 watt output. A1, A2, F1, or F2 emission may be authorized. This frequency may also be assigned to operational fixed stations employing directional antenna systems (front-to-back ratio of 20 dB) when such stations are located at least 120 km. (75 mi.) from the boundaries of any urbanized area of 200,000 or more population, (U.S. Census of Population, 1960, vol. I, fig. 46, p. S36). The maximum power output of the transmitter for such fixed stations may not exceed 50 watts. A1, A2, F1, or F2 emission may be authorized.

(7) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 2.8 kHz and the maximum frequency deviation may not exceed 2.5 kHz. For AM transmitters the highest modulating frequency may not exceed 2.0 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 6 kHz.

(8) This frequency is share with Forest Products and Petroleum Radio Services in the States of Arkansas, Louisiana, Oklahoma, Oregon, Texas, and Washington.

(9) This frequency is not available for assignment in this service in the States of Arkansas, Louisiana, Oklahoma, Oregon, Texas, and Washington. In these states this frequency is available only in the Petroleum and Forest Products Radio Services.

(10) This frequency will be assigned only for transmitting hydrological or meteorological data. The use of this frequency is on a secondary basis to Federal Government stations, and the hydrological or meteorological data being handled must be made available on request to governmental agencies. Other provisions of this part notwithsatnding, an operational fixed station operating on this frequency shall not engage in communications with any station in the mobile service unless written authorization to do so has been obtained from the Commission. Persons who desire to operate stations on this frequency should communicate with the Commission for instructions concerning the prcedure to be followed in filing formal application.

(11) This frequency is available on a shared basis with other Industrial Radio Services and the Local Government Radio Service. On this frequency the maximum power output of the transmitter may not exceed 50 watts for fixed stations and 1 watt for mobile stations. A1, A2, F1, or F2 emission may be authorized, and mobile stations used to control remote objects and devices may be operated in the continuous transmit mode. Operational fixed stations communicating with two receiving locations or with three or more receiving locations all of which are located within an angle of azimuth of 160° must employ directional antennas having a front-to-back ratio of at least 20 dB. Omnidirectional antennas having unity gain may be employed at other stations.

(12) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 1.7 kHz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1.2 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwith may not exceed 3 kHz.

(13) This band is available to stations operating in this service subject to the provisions of § 90.259.

(14) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public Safety and Land Transportation Radio Services where they are assigned for land mobile operations.

(15) This frequency is available on a shared basis in the Power, Petroleum, Forest Products, Manufacturers, and Telephone Maintenance Radio Services. It may be assigned only when all of the frequencies in the 450–470 MHz band allocated to the service in which the applicant is primarily eligible are assigned within 56 km. (35 mi.) of the proposed base station. Applications for this frequency must be coordinated with all five services.

(16) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(17) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(18) Assignment of frequencies for operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(19) This frequency band is available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices.

(20) Use of this frequency is limited to developmental operation and is subject to the provisions of Subpart P.

(e) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253.)

(1) Frequencies may be substituted for those available below 25 MHz in accordance with the provisions of § 90.263.

(2) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available in accordance with § 90.255.

(3) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(4) Persons eligible under the provisions of subparagraph (a) (2) of this section who are engaged in the distribution of natural gas directly to consumers and who have a substantial requirement for mobile service communication with a gas supplier may be authorized to operate on the Petroleum Radio Service frequency or frequencies assigned to the supplier. However, such operation shall be limited to communications in a local area common to both parties, and shall relate only to gas supply and distribution activities. The application of any person seeking a frequency assignment under the provisions of this paragraph shall be accompanied by a written statement from the natural gas supplier which concurs in the need for such intercommunication and consents to the use by the natural gas distributor of the frequency or frequencies involved.

(f) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of vehicular repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) Frequencies in the ranges 30.56–30.57 MHz, 35.00–35.01 MHz, 35.99–36.00 MHz, and 37.00–37.01 MHz are available for developmental operation by applicants in this service subject to the provisions of Subpart P, notwithstanding this limitation.

(3) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

§ 90.65 Petroleum radio service.

(a) *Eligibility.* Persons primarily engaged in prospecting for, producing, collecting, refining, or transporting by means of pipeline, petroleum or petroleum products (including natural gas) are eligible to hold authorizations in the Petroleum Radio Service to operate radio stations for transmissions of communications essential to such activities of the licensee: However, persons engaged solely in the containment or cleanup of oil spills will only be assigned those frequencies designated by limitations (30) and (31) in this section.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Petroleum Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Petroleum radio service frequency table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
1614	Base or mobile	1, 2, 3, 4
1628	do	1, 2, 3, 4
1652	do	1, 2, 3, 4
1676	do	1, 2, 3, 4
1700	do	1, 2, 3, 4
2292	do	1, 2, 3, 5
2398	do	1, 2, 4, 5
4637.5	do	1, 2, 4, 5
Megahertz:		
25.02	do	3, 4
25.04	do	6
25.06	do	3, 4
25.08	do	6, 7
25.10	do	3, 4
25.12	do	
25.14	do	3, 4, 7
25.16	do	
25.18	do	3, 4
25.20	do	
25.22	do	4, 5
25.24	do	
25.26	do	4, 5
25.28	do	
24.30	do	4, 5
25.32	do	
20.66	do	4, 5, 8
20.70	do	4, 5
20.74	do	4, 5, 8
20.78	do	4, 5
20.82	do	4, 5, 8
33.18	do	
33.20	do	
33.22	do	
33.24	do	
33.26	do	
33.28	do	
33.30	do	
33.32	do	
33.34	do	
33.36	do	
33.38	do	
26.25	do	9
41.71	do	9
48.56	do	10
48.58	do	10
48.60	do	10
48.62	do	10
48.64	do	10
48.66	do	10
48.68	do	10
48.70	do	10
48.72	do	10
48.74	do	10
48.76	do	10
48.78	do	10
48.80	do	10
48.82	do	10
48.84	do	10
48.86	do	10
48.88	do	10
48.90	do	10
48.92	do	10
48.94	do	10
48.96	do	10
48.98	do	10
49.00	do	10
49.02	do	10
49.04	do	10
49.06	do	10
49.08	do	10
49.10	do	10
49.12	do	10
49.14	do	10
49.16	do	10
49.18	do	10
49.20	do	10
49.22	do	10
49.24	do	10
49.26	do	10
49.28	do	10
49.30	do	10
49.32	do	10
49.34	do	10
49.36	do	10
49.38	do	10
49.40	do	10
49.42	do	10
49.44	do	10
49.46	do	10
49.48	do	10
49.50	do	10
72 to 76	Operational fixed	11
150.980	Base or mobile	6
153.065	do	12
153.050	do	13
153.065	do	4, 5, 13
153.080	do	4, 5, 13
153.095	do	4, 5, 13
153.110	do	4, 5, 13
153.125	do	4, 5, 13
153.140	do	4, 5, 13
153.155	do	4, 5, 13
153.170	do	4, 5, 13
153.185	do	4, 5, 13
153.200	do	4, 5, 13
153.215	do	4, 5, 13
153.230	do	4, 5, 13
153.245	do	4, 5, 13
153.260	do	4, 5, 13
153.275	do	4, 5, 13
153.290	do	4, 5, 13
153.305	do	4, 5, 12
153.320	do	4, 5, 13
153.335	do	4, 5, 13
153.350	do	4, 5, 13
153.365	do	13
153.380	do	13
153.395	do	13
153.425	do	14
153.440	do	10, 15
153.455	do	14
153.485	do	14
153.500	do	10, 15
153.515	do	14
153.545	do	14
153.560	do	10, 15
153.575	do	14
153.605	do	14
153.620	do	10, 15
153.635	do	14
153.665	do	14
153.680	do	10, 15
154.4675 to 154.4750.	Fixed or mobile	16, 17, 18
154.585	Mobile	6, 19
158.145	Base or mobile	6, 19
158.160	do	20, 21
158.175	do	20
158.205	do	20
158.220	do	20, 21
158.235	do	20
158.265	do	20
158.280	do	13
158.295	do	13
158.310	do	13
158.325	do	13
158.355	do	10
158.370	do	4, 5, 10
158.415	do	13
158.430	do	4, 5, 13
158.445	Mobile	6, 22
159.480	Base or mobile	6
169.425	Operational fixed	23
169.450	do	23
169.475	do	23
169.500	do	23
169.525	do	23
170.225	do	23
170.250	do	23
170.275	do	23
170.300	do	23
170.325	do	23
171.025	do	23
171.050	do	23
171.075	do	23
171.100	do	23
171.125	do	23
171.825	do	23
171.850	do	23
171.875	do	23
171.900	do	23
171.925	do	23
173.20375	Fixed or mobile	18, 19, 24
173.21	do	18, 24, 25
173.25	do	10, 21
173.30	do	10, 21
173.35	do	10, 21
173.39	do	18, 24, 25
173.89625	do	18, 19, 24
216 to 220	Base or mobile	26
406.125	Operational fixed	23
408.175	do	23
409.675	do	23
409.725	do	23
412.625	do	23
412.675	do	23
412.725	do	23
412.775	do	23
450.470	Fixed	27
451.175	Base or mobile	28
451.225	do	28
451.275	do	28
451.375	do	28
451.425	do	28
451.475	do	28
451.525	do	28
451.550	Base or mobile	4, 5, 10
451.575	do	28
451.600	do	4, 5, 10
451.625	do	28
451.650	do	4, 5, 10
451.675	do	28
451.700	do	4, 5, 10
451.750	do	4, 5, 10
454.000	do	6
459.000	do	6
456.175	Mobile	28
456.225	do	28
456.275	do	28
456.375	do	28
456.425	do	28
456.475	do	28
456.525	do	28
456.550	do	10
456.575	do	28
456.600	do	10
456.625	do	28
456.650	do	10
456.675	do	28
456.700	do	10
456.750	do	10
462.475	Base or mobile	28
462.525	do	28
467.475	Mobile	28
467.525	do	28
470 to 512	Base or mobile	29
806.821	Mobile only	30
851.866	Base or mobile	30
952 and above.	Operational fixed	31
1427 to 1435	Operational fixed, base or mobile.	26
2450 to 2500	Base or mobile	32
8400 to 8500	do	33
10,550 to 10,680.	do	

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) Frequencies below 25 MHz will be assigned to base or mobile stations in this service only upon a satisfactory showing that, from a safety of life standpoint, frequencies above 25 MHz will not meet the operational requirements of the applicant.

(2) Use of this frequency is limited to an amplitude modulation mode of operation.

(3) This frequency is available for assignment only to stations utilized for geophysical purposes.

(4) Geophysical operations may use tone or impulse signalling for purposes other than indicating failure of equipment or abnormal conditions on this frequency. All such tone or impulse signalling shall be on a secondary basis and subject to the following limitations:

(i) Maximum duration of a single non-voice transmission, may not exceed three minutes.

(ii) The bandwidth utilized for secondary tone or impulse signalling shall not exceed that authorized to the licensee for voice emission on the frequency concerned.

(iii) Frequency loading resulting from the use of secondary tone or impulse signalling will not be considered in whole or in part, as a justification for authorizing additional frequencies in the licensee's mobile service system.

(iv) The maximum transmitter output power for tone or impulse transmissions shall not exceed 50 watts.

(5) This frequency is available for assignment to geophysical stations on a secondary basis to other Petroleum licensees. Geophysical stations must cease operations on this frequency immediately upon receiving notice that interference is being caused to mobile service stations.

(6) This frequency is primarily available for oil spill containment and cleanup operations and for training and drills essential in the preparations for the containment and cleanup of oil spills. It is secondarily available for general base-

mobile operations in the Petroleum Radio Service on a non-interference basis. Secondary users of this frequency are required to be present in their area of operation or upon notice by the Commission or a primary user that harmful interference is being caused to oil spill containment and cleanup activities in other areas.

(7) Operation on this frequency is secondary to stations in the maritime mobile service operating in accordance with the International table of frequency allocations.

(8) This frequency is shared with the Motor Carrier Radio Service.

(9) This Government frequency is available for shared Government/non-Government use by stations engaged in oil spill containment and cleanup operations and for training and drills essential in the preparation for containment and cleanup of oil spills. Such use will be confined to inland and coastal waterways.

(10) This frequency is shared with the Forest Products Radio Service.

(11) The frequencies available for use at operational fixed stations in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services, and are available only in accordance with the provisions of § 90.257.

(12) This frequency is shared with the Special Industrial Radio Service.

(13) This frequency is shared with the Forest Products and Manufacturers Radio Services.

(14) This frequency is shared with Power and Forest Products Radio Services and is available in this service only in the States of Arkansas, Louisiana, Oklahoma and Texas. Elsewhere this frequency is available in the Power Radio Service.

(15) This frequency is available for assignment in this service only in the States of Arkansas, Louisiana, Oklahoma and Texas. Elsewhere this frequency is available in the Power Radio Service.

(16) The maximum power output of the transmitter may not exceed 50 watts for fixed stations and 1 watt for mobile stations. A1, A2, F1, or F2 emission may be authorized. Mobile stations used to control remote objects and devices may be operated in the continuous transmit mode. Operational fixed stations communicating with two receiving locations or with three or more receiving locations all of which are located within an angle of azimuth of 160° must employ directional antennas having a front-to-back ratio of at least 20 dB. Omnidirectional antennas having unity gain may be employed at other stations.

(17) This frequency band is shared with the Special Industrial Radio Service.

(18) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 2.8 kHz and the maximum deviation may not exceed 2.5 kHz. For AM transmitters the highest modulating frequency may not exceed 2 kHz. The carrier frequency must be maintained within 0.0005 percent of the center of the frequency band, and the authorized bandwidth may not exceed 6 kHz.

(19) This frequency is limited to a maximum power of 20 watts.

(20) This frequency is shared with Power and Forest Products Radio Services and is available in this service only in the States of Arkansas, Louisiana, Oklahoma, Oregon, Texas and Washington. Elsewhere, this frequency is available only in the Power Radio Service.

(21) This frequency is available for assignment in this service only in the States of Arkansas, Louisiana, Oklahoma, Oregon, Texas and Washington. Eleswhere it is available in the Power Radio Service.

(22) This frequency is limited to a maximum power of 75 watts.

(23) This frequency will be assigned only for transmitting hydrological or meteorological data. The use of this frequency is on a secondary basis to Federal Government stations, and the hydrological or meteorological data being handled must be made available on request to governmental agencies. Other provisions of this part notwithstanding, an operational fixed station operating on this frequency shall not engage in communications with any station in the mobile service unless written authorization to do so has been obtained from the Commission. Persons who desire to operate stations on this frequency should communicate with the Commission for instructions concerning the procedure to be followed in filing formal application.

(24) This frequency band is shared with Power, Forest Products, Special Industrial, Petroleum, Manufacturers, Business and with the Local Government Radio Service.

(25) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 1.7 kHz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1.2 kHz. The carrier frequency must be maintained within 0.0005 percent, and the authorized bandwidth may not exceed 3 kHz.

(26) This band is available to stations operating in this service subject to the provisions of § 90.259.

(27) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public Safety and Land Transportation Radio Services where they are assigned for land mobile operations.

(28) This frequency is available on a shared basis in the Power, Petroleum, Forest Products, Manufacturers, and Telephone Maintenance Radio Services. It may be assigned only when all of the frequencies in the 450–470 MHz band allocated to the service in which the applicant is primarily eligible are assigned within 56 km. (35 mi.) of the proposed base station. Applications for this frequency must be coordinated with all five services.

(29) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(30) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(31) Assignment of frequencies to operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(32) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific or medical (ISM) devices.

(33) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart P.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253).

(1) Frequencies may be substituted for those available below 25 MHz in accordance with the provisions of § 90.255.

(2) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available for assignment in accordance with § 90.255.

(3) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(4) Persons eligible in this service who are engaged in the transportation of natural gas by pipeline and who have a substantial requirement for mobile service communication with a public utility company purchasing such gas for distribution to the consumer may be authorized to operate on the Power Radio Service frequency or frequencies assigned to such distributor(s). However, such operation shall be limited to communications in the local area common to both parties and shall relate only to gas supply and distribution activities. The application of any person seeking a frequency assignment under the provisions of this paragraph shall be accompanied by a written statement from the natural gas distributor which concurs in the need for such intercommunication, and consents to the use by the natural gas supplier of the frequencies involved.

(e) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of vehicular repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) Frequencies in the ranges 30.50–30.57 MHz, 30.00–35.01 MHz, 35.99–36.00 MHz, and 37.00–37.01 MHz are available for developmental operation by applicants in this service subject to the provisions of subpart P notwithstanding this limitation.

(3) Authorizations for multiple frequencies for geophysical operations will be granted on the frequencies governed by the limitations in subparagraphs (c)(3) and (c)(4) of this section notwithstanding this limitation. However, each geographical exploration party may only use a maximum of four frequencies at any one time.

(4) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

§ 90.67 Forest products radio service.

(a) *Eligibility.* Persons primarily engaged in any of the following activities are eligible to hold authorizations in the Forest Products Radio Service to operate radio stations for transmission of communications essential to such activities of the licensee:

(1) Tree logging, tree farming, or related woods operations, including related hauling activities, if the hauling activities are performed under contract to, and exclusively for, persons engaged in woods operations;

(2) Manufacturing lumber, plywood, hardboard, or pulp and paper products from wood fiber by persons eligible under the provisions of subparagraph (1) of this paragraph.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Forest Products Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Forest products radio service frequency table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
1676	Base or mobile	1
1700	do	1
2398	do	1
Megahertz:		
29.71	do	
29.73	do	
29.75	do	
29.77	do	
29.79	do	
30.68	do	
30.72	do	
37.44	do	
37.88	do	
48.56	do	2
48.58	do	2
48.60	do	2
48.62	do	2
48.64	do	2
48.66	do	2
48.68	do	2
48.70	do	2
48.72	do	2
48.74	do	2
48.76	do	2
48.78	do	2
48.80	do	2
48.82	do	2
48.84	do	2
48.86	do	2
48.88	do	2
48.90	do	2
48.92	do	2
48.94	do	2
48.96	do	2
48.98	do	2
49.00	do	2
49.02	do	2
49.04	do	2
49.06	do	2
49.08	do	2
49.10	do	2
49.12	do	2
49.14	do	2
49.16	do	2
49.18	do	2
49.20	do	2
49.22	do	2
49.24	do	2
49.26	do	2
49.28	do	2
49.30	do	2
49.32	do	2
49.34	do	2
49.36	do	2
49.38	do	2
49.40	do	2
49.42	do	2
49.44	do	2
49.46	do	2
49.48	do	2
49.50	do	2
49.54	do	3
49.58	do	3
72–76	Operational fixed	4
152.480	Base or mobile	5
153.050	do	6
153.065	do	6
153.080	do	6
153.095	do	6
153.110	do	6
153.125	do	6
153.140	do	6
153.155	do	6
153.170	do	6
153.185	do	6
153.200	do	6
153.215	do	6
153.230	do	6
153.245	do	6
153.260	do	6
153.275	do	6
153.290	do	6
153.305	do	6
153.320	do	6
153.335	do	6
153.350	do	6
153.365	do	6
153.380	do	6
153.395	do	6
153.425	do	7
153.440	do	2, 8
153.455	do	7
153.485	do	7
153.500	do	2, 8
153.515	do	7
153.545	do	7
153.560	do	2, 8
153.575	do	7
153.605	do	7
153.620	do	2, 8
153.635	do	7
153.665	do	7
153.680	do	2, 8
154.570	Mobile	9
154.600	do	9
154.625	Base or mobile	5
157.740	do	5
158.145	do	10
158.160	do	2, 11
158.175	do	10
158.205	do	10
158.220	do	2, 11
158.235	do	10
158.265	do	10
158.280	do	6
158.295	do	6
158.310	do	6
158.325	do	6
158.355	do	2
158.370	do	6
158.415	do	6
158.430	do	6
158.460	do	5
169.425	Operational fixed	12
169.450	do	12
169.475	do	12
169.500	do	12
169.525	do	12
170.250	do	12
170.275	do	12
170.300	do	12
170.325	do	12
171.025	do	12
171.050	do	12
171.075	do	12
171.100	do	12
171.125	do	12
171.825	do	12
171.850	do	12
171.875	do	12
171.900	do	12
171.925	do	12
173.20375	Fixed or mobile	13, 14
173.21	do	13, 15
173.25	Base or mobile	2, 11
173.30	do	2, 11
173.35	do	2, 11
173.39	Fixed or mobile	13, 15
173.39625	do	13, 14
216–220	Base or mobile	16
406.125	Operational fixed	12
406.175	do	12
409.675	do	12
409.725	do	12
412.625	do	12
412.675	do	12
416.725	do	12
412.775	do	12
450–470	Fixed	17
451.175	Base or mobile	18
451.225	do	18
451.275	do	18
451.375	do	18
451.425	do	18
451.475	do	18
451.525	do	18
451.550	do	2
451.575	do	18
451.600	do	2
451.625	do	18
451.650	do	2
451.675	do	18
451.700	do	2
451.750	do	2
456.175	Mobile	18
456.225	do	18
456.275	do	18
456.375	do	18
456.425	do	18
456.475	do	18
456.525	do	18
456.550	do	2
456.575	do	18
456.600	do	2
456.625	do	18
456.650	do	2
456.675	do	18
456.700	do	2
456.750	do	2
462.475	Base or mobile	18
462.525	do	18
467.475	Mobile	18
467.525	do	18
470–512	Base or mobile	19
806–821	Mobile	20
851–866	Base or mobile	20
952 and above.	Operational fixed	21
1427–1435	Operational fixed, base or mobile.	16
2450–2500	Base or mobile	22
8400–8500	do	23
10,550–10,680.	do	

(c) Explanation of assignment limitations appearing in the frequency tabulation of paragraph (b) of this section:

(1) Frequencies below 25 MHz will be assigned to base or mobile stations in this service only upon a satisfactory showing that, from a safety of life standpoint, frequencies above 25 MHz will not meet the operational requirements of the applicant.

(2) This frequency is shared with the Petroleum Radio Service.

(3) This frequency is shared with the Special Industrial Radio Service.

(4) The frequencies available for use at operational fixed stations in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other

services and are available only in accordance with the provisions of § 90.257.

(5) This frequency is available in this service and in the Special Industrial Radio Service on a secondary basis to one-way paging Communications authorized in the Business Radio Service.

(6) This frequency is shared with the Petroleum and Manufacturers Radio Services.

(7) This frequency is shared with the Power and Petroleum Radio Service and is available in this service only in the States of Arkansas, Louisiana, Oklahoma and Texas. Elsewhere it is available in the Power Radio Service.

(8) This frequency is available for assignment in this service, only in the States of Arkansas, Louisiana, Oklahoma, and Texas. Elsewhere, this frequency is available in the Power Radio Service.

(9) Authorizations to operate on this frequency will be issued for A2 or F2 emission for tone signalling or for a combination of such emission with A3 or F3 emission with a maximum bandwidth of 20 kHz. The output power shall not exceed 2 watts. The maximum distance between any transmitter and the center of the radiating portion of its antenna shall not exceed 8 m. (25 ft.) Operation on this frequency is secondary to stations in the Business Radio Service.

(10) This frequency is shared with Power and Petroleum Radio Services and is available in this service only in the States of Arkansas, Louisiana, Oklahoma, Oregon, Texas and Washington.

(11) This frequency is available for assignment in this service, only in the States of Arkansas, Louisiana, Oklahoma, Oregon, Texas and Washington. Elsewhere it is available in the Power Radio Service.

(12) This frequency will be assigned only for transmitting hydrological or meteorological data. The use of this frequency is on a secondary basis to Federal Government stations, and the hydrological or meteorological data being handled must be made available on request to governmental agencies. Other provisions of this part notwithstanding, an operational fixed station operating on this frequency shall not engage in communications with any station in the mobile service unless written authorization to do so has been obtained from the Commission. Persons who desire to operate stations on this frequency should communicate with the Commission for instructions concerning the procedure to be followed in filing formal application.

(13) This frequency is available on a shared basis with the Local Government Radio Service and Industrial Radio Services as follows: Special Industrial, Business, Power, Protection, Manufacturers, Forest Products, Industrial Radio Location, Motion Picture, Relay Press, and Telephone Maintenance. On this frequency the maximum power output of the transmitter may not exceed 50 watts for fixed stations and 3 watts for mobile stations. A1, A2, F1, or F2 emissions may be authorized, and mobile stations used to control remote objects and devices may be operated in the continuous transmit mode. Operational fixed stations communicating with two receiving locations or with three or more receiving locations all of which are located within an angle of azimuth of 160° must employ directional antennas having a front-to-back ratio of at least 20 dB. Omnidirectional antennas having unity gain may be employed at other stations.

(14) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 2.8 kHz and the maximum deviation may not exceed 2.5kHz. For AM transmitters the highest modulating frequency may not exceed 2 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 6 kHz.

(15) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 1.7 kHz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1.2 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 3 kHz.

(16) This band is available to stations in this service subject to the provisions of § 90.259.

(17) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.281. Operation on these frequencies is secondary to stations in the Public Safety and Land Transportation Radio Services where they are assigned for land mobile operations.

(18) This frequency is available on a shared basis in the Power, Petroleum, Forest Products, Manufacturers, and Telephone Maintenance Radio Services. It may be assigned only when all of the frequencies in the 450–470 MHz band allocated to the service in which the applicant is primarily eligible are assigned within 56 km. (35 mi.) of the proposed base station. Applications for this frequency must be coordinated with all five services.

(19) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(20) Subpart M contains rules for assignment of frequencies in the 806–821 MHz and 851–866 MHz bands.

(21) Assignment of frequencies for operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(22) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices.

(23) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart P.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service (See also § 90.253.)

(1) Frequencies may be substituted for those available below 25 MHz in accordance with the provisions of § 90.253.

(2) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available in acordance with § 90.255.

(3) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(e) Limitation on number of frequencies assignable. Normally only one frequency or pair of frequencies in the pair frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of vehicular repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) Frequencies in the ranges 30.56–30.57 MHz, 35.00–35.01 MHz, 35.99–36.00 MHz, and 37.00–37.01 MHz are available for developmental operation by applicants in this service subject to the provisions of Subpart P notwithstanding this limitation.

(3) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operations of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

§ 90.69 Motion picture radio service.

(a) *Eligibility.* Persons primarily engaged in the production or filming of motion pictures are eligible to hold authorizations in the Motion Picture Radio Service to operate radio stations for transmission of communications essential to such activities of the licensee.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Motion Picture Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Motion picture radio service frequency table

Frequency or band	Class of station(s)	Limitations
Kiloherts:		
1628	Base or mobile	1
1652	do	1
2292	do	1
2398	do	1
4637.5	do	1
Megaherts:		
72 to 76	Operational fixed	2
152.87	Base or mobile	3
152.90	do	3
152.93	do	3
152.96	do	3
152.99	do	3
153.02	do	3
173.225	do	4
173.275	do	4
173.325	do	4
173.375	do	4
806 to 821	Mobile	5

Frequency or band	Class of station(s)	Limitations
Megahertz:		
851 to 866	Base or mobile	5
952 and above.	Operational fixed	6
1427 to 1435	Base, mobile or operational fixed.	7
2450 to 2500	Base or mobile	8
8400 to 8500	do	9
10,550 to 10,680.	do	

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) Frequencies below 25 MHz will be assigned to base or mobile stations in this service only upon a satisfactory showing that, from a safety of life standpoint, frequencies above 25 MHz will not meet the operational requirements of the applicant.

(2) The frequencies available for use at operational fixed stations in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(3) This frequency is shared with the Special Industrial Radio Service.

(4) This frequency is shared with the Relay Press Radio Service.

(5) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(6) Assignment of frequencies for operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this chapter.

(7) This band is available in this service subject to the provisions of § 90.259.

(8) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific or medical (ISM) devices.

(9) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart P.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service.

(1) Frequencies may be substituted for those available below 25 MHz in accordance with the provisions of § 90.263.

(2) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available for in accordance with § 90.255.

(3) Frequencies in the band 73–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permited.

(e) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be asisgned in connection with operation of vehicular repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) Frequencies in the ranges 30.56–30.57 MHz, 35.00–35.01 MHz, 35.99–36.00 MHz, and 37.00–37.01 MHz are available for assignment for developmental operation to applications in this service subject to the provisions of Subpart P notwithstanding this limitation.

(3) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz, may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

§ 90.71 Relay press radio service.

(a) *Eligibility.* Persons primarily engaged in the publication of a newspaper or in the operation of an established press association are eligible to hold authorizations in the Relay Press Radio Service to operate radio stations for transmission of communications essential to such activities of the licensee.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Relay Press Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (c) of this section:

Relay press radio service frequency table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
72.0 to 76.0	Operational fixed	1
173.225	Base or mobile	2
173.275	do	2
173.325	do	2
173.375	do	2
452.975	do	
453.000	do	
457.975	Mobile	
458.000	do	
806 to 821	do	3
851 to 866	Base or mobile	3
952 and above.	Operational fixed	4
1427 to 1435	Operational fixed, base or mobile.	5
2450 to 2500	Base or mobile	6
8400 to 8500	do	7
10,550 to 10,680.	do	

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) The frequencies available in the band 72-76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(2) This frequency is shared with the Motion Picture Radio Service.

(3) Subpart M contains rules for assignment of frequencies in the 806-821 and 851-866 MHz bands.

(4) Assignment of frequencies for operational fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(5) This band is available in this service subject to the provisions of § 90.259.

(6) Available only on a shared basis with stations in other services and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices.

(7) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart P.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See Section 90.253.)

(1) The frequencies 27.235, 27.245, 27,255, 27.265, and 27.275 MHz are available for in accordance with § 90.255.

(2) Frequencies in the band 73–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(e) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single application in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of vehicular repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) Frequencies in the ranges 30.56–30.57 MHz, 35.00–35.01 MHz, 35.99–36.00 MHz, and 37.00–37.01 MHz are available for assignment to applicants in this service subject to the provisions of Subpart P notwithstanding this limitation.

(3) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

§ 90.73 Special industrial radio service.

(a) *Eligibility.* Persons primarily engaged in any of the following activities are eligible to hold authorizations in the Special Industrial Radio Service to operate radio stations for the transmission of only those communications essential to such activities of the licensee. (Persons engaging in some activities which are eligible under this paragraph and in some which are not, and desiring to use radio in connections with both types of activities should apply for authorization in the Business Radio Service.)

(1) The operation of farms, ranches, or similar land areas, for the quantity production of crops or plants; vines or trees (excluding forestry operations); or for the keeping, grazing or feeding of livestock for animal products, animal increase, or value enhancement. Persons establishing eligibility under this subparagraph may use their radio facilities in connection with the gathering or

processing of products grown or raised for them by others.

(2) Plowing, soil conditioning, seeding, fertilizing, or harvesting for agricultural activities.

(3) Spraying or dusting of insecticides, herbicides, or fungicides, in areas other than enclosed structures.

(4) Livestock breeding service.

(5) The operation of a commercial business regularly engaged in the construction of roads, bridges, sewer systems, pipelines, airfields, or water, oil, gas, or power productions, collection, or distribution systems. Other engineering projects, normally classified as heavy construction activities, will be considered on the merits of the showing made, however, the construction of buildings is not included in this category.

(6) The operation of mines for the recovery of solid fuels, minerals, metal, rock, sand and gravel from the earth or the sea, including the exploration for and development of mining properties.

(7) Maintaining, patrolling or repairing gas or liquid transmission pipelines, tank cars, water or waste disposal wells, industrial storage tanks, or distribution systems of public utilities. Persons establishing eligibility under this subparagraph may use their radio facilities in connection with the containment and cleanup of industrial liquid spillage.

(8) Acidizing, cementing, logging, perforating, or shooting activities, and services of a similar nature incident to the drilling of new oil or gas wells, or the maintenance of production from established wells.

(9) Supplying chemicals, mud, tools, pipe, and other materials or equipment unique to the petroleum and gas production industry, as the primary activity of the applicant if delivery, installation or application of these materials requires the use of specifically fitted conveyances.

(10) The delivery of ice or fuel to the consumer for heating, lighting, refrigeration or power generation purposes, by means other than pipelines or railroads when such products are not to be resold following their delivery. Persons establishing eligibility under this subparagraph may use their radio facilities in connection with the servicing of the equipment that uses or consumes the products delivered.

(11) The delivery and pouring of ready mixed concrete or hot asphalt mix.

(b) *Special limitation on use of service.* Communications relating to any of the following shall not be transmitted by any station licensed in the Special Industrial Radio Service.

(1) Sales reports or the dispatching of salesmen;

(2) Payrolls, accounts, or inventory controls,

(3) Any mesage relating to the retail delivery of any item or product, except where such retail delivery is specifically included in the eligibility provisions of this section.

(c) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Special Industrial Radio Service together with the class of station(s) to which they are normally assigned, and the specific assignment limitations which are explained in paragraph (d) of this section.

Special industrial radio service frequency table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
452	Base or mobile	1
1598	do	1
1637.5	do	1
Megahertz:		
27.49	do	
27.51	do	
27.53	do	
27.55	do	
27.57	do	
30.58	do	2
30.60	do	2
30.62	do	2
30.64	do	
31.28	do	
31.32	do	
31.36	do	
31.40	do	
31.44	do	
31.48	do	
31.52	do	
31.56	do	
31.60	do	
31.64	do	
31.68	do	
31.72	do	
31.76	do	
31.80	do	
31.84	do	
31.88	do	
31.92	do	
31.96	do	
33.12	Mobile	3
35.28	Base or mobile	
35.32	do	
35.36	do	
35.40	do	
35.44	do	
35.48	do	
35.52	do	
35.74	do	3
35.76	do	2
35.78	do	2
35.80	do	2
35.82	do	2
35.84	do	2
35.86	do	2
43.02	do	
43.04	do	4
43.06	do	
43.08	do	
43.10	do	
43.12	do	
43.14	do	
43.18	do	3
43.28	do	
43.32	do	
43.36	do	
43.40	do	
43.44	do	
43.48	do	
43.52	do	
47.44	do	3
47.48	do	2
47.52	do	2
47.56	do	2
47.60	do	2
47.64	do	3
47.68	do	2
49.52	do	
49.54	do	5
49.56	do	2
49.58	do	5
72.76	Operational fixed	3
72.44	Mobile	7
72.48	do	7
72.52	do	7
72.56	do	7
72.60	do	7
75.44	do	7
75.48	do	7
75.52	do	7
75.56	do	7
75.60	do	7
151.490	Base or mobile	2, 8
151.505	do	4
151.520	do	2
151.535	do	2
151.550	do	2
151.565	do	2
151.580	do	2
151.595	do	2
152.18	do	2, 9
152.870	do	10
152.885	do	2
152.900	do	2, 10
152.915	do	2
152.930	do	2, 10
152.945	do	2
152.960	do	2, 10
152.975	do	2
152.990	do	2, 9
153.005	do	2
153.020	do	2, 9
153.035	do	2, 11
154.0675 to 154.4750	Fixed or mobile	11, 12, 13
154.49	Base or mobile	2
154.625	do	2, 9
157.74	do	2, 9
158.385	do	2
158.400	do	4
158.40	do	2, 9
169.425	Operational fixed	14
169.450	do	14
169.475	do	14
169.500	do	14
169.525	do	14
170.225	do	14
170.250	do	14
170.275	do	14
170.300	do	14
170.325	do	14
171.025	do	14
171.050	do	14
171.075	do	14
171.100	do	14
171.125	do	14
171.825	do	14
171.850	do	14
171.875	do	14
171.900	do	14
171.925	do	14
173.20375	Fixed or mobile	12, 13, 15
173.21	do	12, 15, 16
173.39	do	12, 15, 16
173.39625	do	12, 13, 15
216 to 220	Base or mobile	17
406.125	Operational fixed	14
406.175	do	14
409.675	do	14
409.725	do	14
412.625	do	14
412.675	do	14
412.725	do	14
412.775	do	14
450 to 470	Fixed	18
451.725	Base or mobile	2
451.775	do	2
451.800	Operational fixed, base or mobile	4, 19
451.825	Base or mobile	2
451.850	do	2
451.875	do	2
451.900	do	2
451.925	do	2
451.950	do	2
451.975	do	2
452.000	do	2
452.025	do	2
452.075	do	2
452.125	do	2
452.175	do	2
456.725	Mobile	2
456.775	do	2
456.800	Operational fixed, base or mobile	4, 19
456.825	Mobile	2
456.850	do	2
456.875	do	2
456.900	do	2
456.925	do	2
456.950	do	2
456.975	do	2
457.000	do	2
457.025	do	2
457.075	do	2
457.125	do	2
457.175	do	2
470 to 512	Base or mobile	17
806 to 821	Mobile	21
851 to 866	Base or mobile	21
902 and above.	Operational fixed	2
1427 to 1435	Operational fixed, base or mobile	17
2450 to 2500	Base or mobile	23
8400 to 8500	do	24
10,550 to 10,680	do	

(d) Explanation of assignment limitations appearing in the frequency table of paragraph (c) of this section:

(1) Frequencies below 25 MHz will be assigned to base or mobile stations in this service only upon a satisfactory showing that, from a safety of life standpoint, frequencies above 25 MHz will not meet the operational requirements of the applicant.

(2) This frequency will be assigned only for operation in a permanent area, normally within 120 km. (75 mi.) of a specified reference point.

(3) Operation on this frequency is limited to a maximum output of 2 watts; and each station authorized will be classified and licensed as a mobile station. Any units of such a station, however, may provide the operational functions of a base or fixed station, on a secondary basis to mobile service operations provided that the separation between the control point and the center of the radiating portion of the antenna of any units so used does not exceed 25 feet (7.6 m).

(4) This frequency will be assigned only to stations used in itinerant operations.

(5) This frequency is shared with the Forest Products Radio Service.

(6) The frequencies available in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(7) This frequency is available on a shared basis in the Manufacturers, Special Industrial, and Railroad Radio Services and interservice coordination is required. All communications must be conducted within the boundaries or confines of plant, factor, shipyard, mill, mine, farm, ranch, or construction area. All operations on this frequency are subject to the provisions of § 90.257(b).

(8) This frequency is not available to stations in Puerto Rico or the Virgin Islands. Elsewhere, this frequency is shared with the Forestry-Conservation Radio Service and interservice coordination is required.

(9) This frequency is available in this service and in the Forest Products Radio Service on a secondary basis to one-way paging communications authorized in the Business Radio Service.

(10) This frequency is shared with the Motion Picture Radio Service.

(11) This frequency band is shared with the Petroleum Radio Service.

(12) In this frequency band the maximum output power of the transmitter may not exceed 50 watts for fixed stations and 1 watt for mobile stations. A1, A2, F1, or F2 emission may be authorized. Mobile stations used to control remote objects and devices may be operated in the continuous transmit mode. Operational fixed stations communicating with two receiving locations or with three or more receiving locations all of which are located within an angle of azimuth of 160° must employ directional antennas having a front-to-back ratio of at least 20 dB. Ominidirectional antennas having unity gain may be employed at other stations.

(13) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 2.8 kHz and the maximum frequency deviation may not exceed 2.5 kHz. For AM transmitters, the highest modulating frequency may not exceed 2.0 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 6 kHz.

(14) This frequency will be assigned only for transmitting hydrological or meteorological data. The use of this frequency is on a secondary basis to Federal Government stations, and the hydrological or meteorological data being handled must be made available on request to governmental agencies. Other provisions of this part notwithstanding, an operational fixed station operating on this frequency shall not engage in communications with any station in the mobile service unless written authorization to do so has been obtained from the Commission. Persons who desire to operate stations on this frequency should communicate with the Commission for instructions concerning the procedure to be followed in filing formal application.

(15) This frequency band is shared with other Industrial Radio Services as follows: Power, Forest Products, Special Industrial, Petroleum, Manufacturers, Business, and the Local Government Radio Service.

(16) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 1.7 kHz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1.2 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 3 kHz.

(17) This frequency band is available to stations in the service subject to the provisions of § 90.259.

(18) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public Safety and Land Transportation Radio Services where they are assigned for land mobile operations.

(19) Operational fixed assignments on this frequency will only be made to an itinerant fixed control or relay station on a secondary basis to land-mobile stations in this service, provided that the fixed relay or control station is to be associated with base and mobile facilities authorized to use other frequencies available for itinerant operation in this service. All such use of these frequencies for fixed systems is limited to locations 161 or more km. (100 mi.) from the center of any urbanized area of 200,000 or more population, except that the distance may be 120 km. (75 mi.) if the output power does not exceed 20 watts. All such fixed systems are limited to a maximum of two frequencies and must employ directional antennas with a front-to-back ratio of at least 15 dB. The centers of urbanized areas of 200,000 or more population are determined from the appendix, page 226, of the U.S. Commerce publication, "Air Line Distance Between Cities in the United States." Urbanized areas of 200,000 or more population are defined in the U.S. Census of Population, 1960, volume 1, table 23, page 1–50.

(20) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(21) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(22) Assignment of frequencies for operational-fixed stations in the bands 952 and above is governed by Part 94 of this chapter.

(23) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific or medical (ISM) devices.

(24) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart P.

(e) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service; (See also § 90.253)

(1) Frequencies may be substituted for those available below 25 MHz in accordance with the provisions of § 90.263.

(2) The frequencies 27.235, 27.245, 27.255, 27.265 and 27.275 MHz are available in accordance with § 90.255.

(3) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(4) The following frequencies are available only in Puerto Rico and the Virgin Islands. These "Base and Mobile" and "Mobile Only" frequencies are available on a shared basis in the Forestry-Conservation Railroad Radio Services, respectively. These "Mobile Only" frequencies may be assigned to a control station associated with a mobile relay system if it is also assigned to the associated mobile station. All applications for the assignment of a new frequency, or to change existing facilities in such a manner as to require frequency coordination as specified in section 90.175, shall be accompanied by evidence of frequency coordination with the sharing service.

Base and mobile:	*Mobile only*
159.240	160.410
159.255	160.425
159.270	160.440
159.285	160.455
159.300	160.470
159.315	160.485
159.330	160.500
159.345	160.515
159.360	160.530
159.375	160.545
159.390	160.560
159.405	160.575
159.420	160.590
159.435	160.605

(5) Land mobile service frequencies above 152 MHz which are listed elsewhere in this part as available to the Petroleum, Forest Products, and Manufacturers Radio Services, are also available, with the exception of the frequency 154.57 MHz, for assignment in this service for use in Hawaii, Puerto Rico, and the Virgin Islands, subject to the same limitations as apply in the Petroleum, Forest Products, and Manufacturers Radio Services. Operation on such frequencies is secondary to stations operating in the Petroleum, Forest Products, or Manufacturers Radio Services and their use will be terminated if they are needed in the areas concerned in any of those services.

(f) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of vehicular repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) Frequencies in the ranges 30.56–30.57 MHz, 35.00–35.01 MHz, 35.99–36.00 MHz and 37.00–37.01 MHz are available for assignment to applicants in this service subject to the provisions of Subpart P notwithstanding this limitation.

(3) Authorization for more than one mobile frequency in the band 72–76 MHz will be issued notwithstanding this limitation.

(4) Frequencies in the 25–30 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(g) *Limitation on itinerant operation.* Base or mobile stations being utilized in itinerant operation will be authorized only on base or mobile frequencies that are not restricted to a permanent area of use by the limitation of subparagraph (d)(2) of this section.

§ 90.75 Business radio service.

(a) *Eligibility.* Persons primarily engaged in any of the following activities are eligible to hold authorizations in the Business Radio Service to operate stations for transmission of communications necessary to such activities of the licensee:

(1) The operation of a commercial activity.

(2) The operation of educational, philanthropic, or ecclesiastical institutions.

(3) Clergymen activities.

(4) The operation of hospitals, clinics or medical associations.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Business Radio Service together with the class of station(s) to which they are normally assigned, and the specific assignment limitations, which are explained in paragraph (c) of this section.

Business radio service frequency table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
27.39	Base or mobile	
27.41	do	
27.43	do	1, 2
27.45	do	1, 2
27.47	do	1, 2
27.49	do	1, 3
27.51	Mobile	4
27.53	do	4
30.76	Base or mobile	1, 2
30.80	do	1, 2
30.84	Mobile	4, 22
30.88	Base or mobile	1, 2
30.92	do	1, 2
30.96	do	1, 2
31.00	do	1, 2
31.04	do	1, 2
31.16	do	1, 2
31.20	do	1, 2
31.24	do	1, 2
33.14	Mobile	4, 22
33.16	Base or mobile	1, 2
33.40	Mobile	6, 22
35.02	do	4, 22
35.04	Base or mobile	1, 3
35.06	do	1, 2
35.08	do	1, 2
35.10	do	1, 2
35.12	do	1, 2
35.14	do	1, 2
35.18	do	1, 2
35.70	do	2
35.72	do	2
35.88	do	1, 2
35.90	do	1, 2
35.92	do	1, 2
35.94	do	
35.96	do	
35.98	do	
42.96	Base or mobile	1, 2
42.98	Mobile	4, 22
43.00	Base or mobile	1, 2
72 to 76	Operational fixed	7
150.815	Base or mobile	8
150.845	do	8
150.875	do	8
150.905	do	8
150.935	do	8
150.965	do	8
150.995	do	8
151.025	do	8
151.055	do	8
151.085	do	8
151.115	do	8
151.145	do	8
151.175	do	8
151.205	do	8
151.235	do	8
151.265	do	8
151.295	do	8
151.325	do	8
151.355	do	8
151.385	do	8
151.415	do	8
151.445	do	8
151.475	do	8
151.625	do	1,3
151.655	do	1,2
151.685	do	1,2
151.715	do	1,2
151.745	do	1,2
151.775	do	1,2
151.805	do	1,2
151.835	do	1,2
151.865	do	1,2
151.895	do	1,2
151.925	do	
151.955	do	
152.300	do	9
152.360	do	9
152.420	do	9
152.480	Base	10, 11, 12
154.515	Base or mobile	1, 2
154.540	do	1, 2
154.570	Mobile	4, 13, 22
154.600	do	4, 14, 22
154.625	Base	10, 11, 15
157.560	Base or mobile	9
157.620	do	9
157.680	do	9
157.740	Base	10, 11, 12, 16
158.460	do	10, 11, 12, 15
169.425	Operational fixed	17
169.450	do	17
169.475	do	17
169.500	do	17
169.525	do	17
170.225	do	17
170.250	do	17
170.275	do	17
170.300	do	17
170.325	do	17
171.025	do	17
171.050	do	17
171.075	do	17
171.100	do	17
171.125	do	17
171.825	do	17
171.850	do	17
171.875	do	17
171.900	do	17
171.925	do	17
173.20375	Mobile	18, 19
173.210	do	18, 20
173.300	do	18, 20
173.39625	do	18, 19
216 to 220	Base or mobile	21
406.125	Operational fixed	17
406.175	do	17
409.675	do	17
409.725	do	17
412.625	do	17
412.675	do	17
412.725	do	17
412.775	do	17
457.525	Mobile	4, 14, 22, 23
457.550	do	4, 14, 22, 23
457.575	do	4, 14, 22, 23
457.600	do	4, 14, 22, 23
460.650	Base or mobile	24, 25, 26
460.675	do	24, 25, 26
460.700	do	24, 25, 26
460.725	do	24, 25, 26
460.750	do	24, 25, 26
460.775	do	24, 25, 26
460.800	do	24, 25, 26
460.825	do	24, 25, 26
460.850	do	24, 25, 26
460.875	do	24, 25, 26
460.900	do	1, 27
460.925	do	1, 27
460.950	do	1, 27
460.975	do	1, 28
461.000	do	1, 28
461.025	do	1, 26
461.050	do	1, 26
461.075	do	1, 26
461.100	do	1, 26
461.125	do	1, 26
461.150	do	1, 26
461.175	do	1, 26
461.200	do	1, 26
461.225	do	1, 26
461.250	do	1, 26
461.275	do	1, 26
461.300	do	1, 26
461.325	do	1, 26
461.350	do	1, 26
461.375	do	1, 26
461.400	do	1, 26
461.425	do	1, 26
461.450	do	1, 26
461.475	do	1, 26
461.500	do	1, 26
461.525	do	1, 26
461.550	do	1, 26
461.575	do	1, 26
461.600	do	1, 26
461.625	do	1, 26
461.650	do	1, 26
461.675	do	1, 26
461.700	do	1, 26
461.725	do	1, 26
461.750	do	1, 26
461.775	do	1, 26
461.800	do	1, 26
461.825	do	1, 26
461.850	do	1, 26
461.875	do	1, 26
461.900	do	1, 26
461.925	do	1, 26
461.950	do	1, 26
461.975	do	1, 26
462.000	do	1, 26
462.025	do	1, 26
462.050	do	1, 26
462.075	do	1, 26
462.100	do	1, 26
462.125	do	1, 26
462.150	do	1, 26
462.175	do	1, 26
462.750	Base	10
462.775	do	10
462.800	do	10
462.825	do	10
462.850	do	10
462.875	do	10
462.900	do	10
462.925	do	10
463.200	Base or mobile	1, 26
463.225	do	1, 26
463.250	do	1, 26
463.275	do	1, 26
463.300	do	1, 26
463.325	do	1, 26

Frequency or band	Class of station(s)	Limitations
Megahertz:		
463.350	do	1, 26
463.375	do	1, 26
463.400	do	1, 26
463.425	do	1, 26
463.450	do	1, 26
463.475	do	1, 26
463.500	do	1, 26
463.525	do	1, 26
463.550	do	1, 26
463.575	do	1, 26
463.600	do	1, 26
463.625	do	1, 26
463.650	do	1, 26
463.675	do	1, 26
463.700	do	1, 26
463.725	do	1, 26
463.750	do	1, 26
463.775	do	1, 26
463.800	do	1, 26
463.825	do	1, 26
463.850	do	1, 26
463.875	do	1, 26
463.900	do	1, 26
463.925	do	1, 26
463.950	do	1, 26
463.975	do	1, 26
464.000	do	1, 26
464.025	do	1, 26
464.050	do	1, 26
464.075	do	1, 26
464.100	do	1, 26
464.125	do	1, 26
464.150	do	1, 26
464.175	do	1, 26
464.200	do	1, 26
464.225	do	1, 26
464.250	do	1, 26
464.275	do	1, 26
464.300	do	1, 26
464.325	do	1, 26, 29
464.350	do	1, 26
464.375	do	1, 26, 29
464.400	do	1, 26
464.425	do	1, 26, 29
464.450	do	1, 26
464.475	do	1, 26, 29
464.500	do	1, 2, 26, 30
464.525	do	1, 26, 29
464.550	do	2, 30
464.575	do	1, 26, 29
464.600	do	1, 26
464.625	do	1, 26
464.650	do	1, 26
464.675	do	1, 26, 29
464.700	do	1, 26
464.725	do	1, 26
464.750	do	1, 26
464.775	do	1, 26, 29
464.800	do	1, 26
464.825	do	1, 26, 29
464.850	do	1, 26
464.875	do	1, 26, 29
464.900	do	1, 26
464.925	do	1, 26, 29
464.950	do	1, 26
464.975	do	1, 26, 29
465.000	Base	10, 30
465.650	Mobile	4, 25, 26, 31
465.675	do	4, 25, 26, 31
465.700	do	4, 25, 26, 31
465.725	do	4, 25, 26, 31
465.750	do	4, 25, 26, 31
465.775	do	4, 25, 26, 31
465.800	do	4, 25, 26, 31
465.825	do	4, 25, 26, 31
465.850	do	4, 25, 26, 31
465.875	do	4, 25, 26, 31
465.900	do	1, 27
465.925	do	1, 27
465.950	do	1, 27
465.975	do	1, 28
466.000	do	1, 28
466.025	do	1, 26
466.050	do	1, 26
466.075	do	1, 26
466.100	do	1, 26
466.125	do	1, 26
466.150	do	1, 26
466.175	do	1, 26
466.200	do	1, 26
466.225	do	1, 26
466.250	do	1, 26
466.275	do	1, 26
466.300	do	1, 26
466.325	do	1, 26
466.350	do	1, 26
466.375	do	1, 26
466.400	do	1, 26
466.425	do	1, 26
466.450	do	1, 26
466.475	do	1, 26
466.500	do	1, 26
466.525	do	1, 26
466.550	do	1, 26
466.575	do	1, 26
466.600	do	1, 26

Frequency or band	Class of station(s)	Limitations
Megahertz:		
466.625	do	1, 26
466.650	do	1, 26
466.675	do	1, 26
466.700	do	1, 26
466.725	do	1, 26
466.750	do	1, 26
466.775	do	1, 26
466.800	do	1, 26
466.825	do	1, 26
466.850	do	1, 26
466.875	do	1, 26
466.900	do	1, 26
466.925	do	1, 26
466.950	do	1, 26
466.975	do	1, 26
467.000	do	1, 26
467.025	do	1, 26
467.050	do	1, 26
467.075	do	1, 26
467.100	do	1, 26
467.125	do	1, 26
467.150	do	1, 26
467.175	do	1, 26
467.750	do	4, 13, 22, 23
467.775	do	4, 13, 22, 23
467.800	do	4, 13, 22, 23
467.825	do	4, 13, 22, 23
467.850	do	4, 13, 22
467.875	do	4, 13, 22
467.900	do	4, 13, 22
467.925	do	4, 13, 22
468.200	do	1, 26
468.225	do	1, 26
468.250	do	1, 26
468.275	do	1, 26
468.300	do	1, 26
468.325	do	1, 26
468.350	do	1, 26
468.375	do	1, 26
468.400	do	1, 26
468.425	do	1, 26
468.450	do	1, 26
468.475	do	1, 26
468.500	do	1, 26
468.525	do	1, 26
468.550	do	1, 26
468.575	do	1, 26
468.600	do	1, 26
468.625	do	1, 26
468.650	do	1, 26
468.675	do	1, 26
468.700	do	1, 26
468.725	do	1, 26
468.750	do	1, 26
468.775	do	1, 26
468.800	do	1, 26
468.825	do	1, 26
468.850	do	1, 26
468.875	do	1, 26
468.900	do	1, 26
468.925	do	1, 26
468.950	do	1, 26
468.975	do	1, 26
469.000	do	1, 26
469.025	do	1, 26
469.050	do	1, 26
469.075	do	1, 26
469.100	do	1, 26
469.125	do	1, 26
469.150	do	1, 26
469.175	do	1, 26
469.200	do	1, 26
469.225	do	1, 26
469.250	do	1, 26
469.275	do	1, 26
469.300	do	1, 26
469.325	do	1, 26
469.350	do	1, 26
469.375	do	1, 26
469.400	do	1, 26
469.425	do	1, 26
469.450	do	1, 26
469.475	do	1, 26
469.500	do	3, 30
469.525	do	1, 26
469.550	do	3, 30
469.575	do	1, 26
469.600	do	1, 26
469.625	do	1, 26
469.650	do	1, 26
469.675	do	1, 26
469.700	do	1, 26
469.725	do	1, 26
469.750	do	1, 26
469.775	do	1, 26
469.800	do	1, 26
469.825	do	1, 26
469.850	do	1, 26
469.875	do	1, 26
469.900	do	1, 26
469.925	do	1, 26
469.950	do	1, 26
469.975	do	1, 26
470 to 512	Base or mobile	33
806 to 821	Mobile	35
851 to 866	Base or mobile	35

Frequency or band	Class of station(s)	Limitations
Megahertz:		
952 and above.	Operational fixed	34
1427 to 1435	Operational fixed, base or mobile.	21
10,550 to 10,680.	Base or mobile	

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) Operation on this frequency is limited to a maximum output power of 110 watts.

(2) This frequency will be assigned only for operation in a permanent area, normally within 120 km. (75 mi.) of a specified reference point.

(3) This frequency will be assigned only to stations used in itinerant operations.

(4) Operation on this frequency is limited to a maximum output power of 2 watts; and each station authorized will be classified and licensed as a mobile station. Any units of such a station, however, may provide the operational functions of a base or fixed station on a secondary basis to mobile service operations, provided, that the separation between the control point and the center of the radiating portion of the antenna of any units so used does not exceed 8 m. (25 ft.).

(5) Reserved.

(6) Operation on this frequency is limited to a maximum output power of 1 watt and each station authorized will be classified and licensed as a mobile station. Any units of such a station, however, may provide the operational functions of a base or fixed station on a secondary basis to mobile service operations, provided, that the separation between the control point and the center of the radiating portion of the antenna of any units so used does not exceed 8 m. (25 ft.).

(7) The frequencies available in the band 72–76 MHz are listed in §90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(8) Use of this frequency in this service is limited to stations located in Puerto Rico and the Virgin Islands.

(9) This frequency is shared with the Taxicab Radio Service and is available for assignment in the Business Radio Service only to stations which are used exclusively in areas outside of Standard Metropolitan Statistical Areas of 50,000 or more population (1950 Census). Operations on this frequency are on a secondary basis to operations in the Taxicab Radio Service.

(10) This frequency is assigned only for one-way paging communications to mobile receivers. Only A2, A3, F2, or F3 emissions may be authorized.

(11) This frequency is also available for base or mobile stations in the Special Industrial and Forest Products Radio Services on a secondary basis to paging operations in the Business Radio Service.

(12) This frequency will not be assigned to stations for use at temporary locations.

(13) This frequency may be used for mobile operation for radio remote control and telemetering functions. A1, A2, F1, or F2 emission may be authorized and mobile stations used to control remote objects or devices may be operated in the continuous carrier transmit mode.

(14) This frequency may be used for mobile operation for radio remote control and telemetering functions. A1, A2, F1, or F2 emission may be authorized. The use of the continuous carrier transmit mode for these purposes is permitted only for stations authorized and continuously licensed since before May 21, 1971.

(15) Operation on this frequency is limited to a maximum output power of 20 watts.

(16) Operation on this frequency is limited to a maximum output power of 75 watts.

(17) This frequency will be assigned only for transmitting hydrological or meteorological data. The use of this frequency is on a secondary basis to Federal Government stations, and the hydrological or meteorological data being handled must be made available on request to governmental agencies. Other provisions of this part notwithstanding, an operational fixed station operating on this frequency shall not engage in communications with any station in the mobile service unless written authorization to do so has been obtained from the Commission. Persons who desire to operate stations on this frequency should communicate with the Commission for instructions concerning the procedure to be followed in filing formal application.

(18) This frequency is available on a shared basis with other Industrial Radio Services as follows: Power, Forest Products, Special Industrial, Petroleum, Manufacturers, Business, and the Local Government Radio Service and may be used in this service only for the purpose of remote control and telemetering. The maximum power output of the transmitter may not exceed 1 watt. Only A1, A2, F1, or F2 emission may be authorized and mobile stations used to control remote objects and devices may be operated in the continuous carrier transmit mode.

(19) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 2.8 kHz and the maximum frequency deviation may not exceed 2.5 kHz. For AM transmitters the highest modulating frequency may not exceed 2.0 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 6 kHz.

(20) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 1.7 kHz, and the maximum frequency deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1.5 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 3 kHz.

(21) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(22) This frequency may not be used aboard aircraft in flight.

(23) This frequency is used on a shared and cooperative basis with on board stations in the maritime mobile service, and may be used for communications concerned with cargo handling from a dock, or cargo handling facility, to a vessel alongside. Any number of the frequencies covered by this limitation may be authorized to one licensee for this purpose. Mobile relay stations may be temporarily installed at or in the vicinity of a dock or cargo handling facility and used when a vessel is alongside the dock or cargo handling facility in the following manner:

For on-vessel mobile relay use:

457.525 MHz, 457.550 MHz, 457.575 MHz, 457.600 MHz.

For associated mobile use:

467.750 MHz, 467.775 MHz, 467.800 MHz, 467.825 MHz.

The following frequencies are to be used for single-frequency simplex:

457.525 MHz, 457.550 MHz, 457.575 MHz, 457.600 MHz.

The effective radiated power (ERP) on this frequency shall not exceed 2 watts. For an on-vessel mobile relay station the center of the radiating portion of the antenna shall be over 3 m. (10 ft.) above the vessel's highest working deck.

(24) Operation on this frequency is limited to a maximum power output of 20 watts.

(25) This frequency is available for assignment to stations located on or near airports serving urbanized areas of 200,000 or more population. U.S. Census of Population, 1960, vol. 1, table 23, page 1–50, and may be assigned only to persons engaged in furnishing commercial air transportation service, or to a nonprofit corporation or association for the purpose of furnishing radio communications service to persons so engaged on a nonprofit cost-sharing basis. Stations on this frequency may be used only in connection with the servicing and supplying of aircraft at the airport.

(i) The amplified signal is retransmitted only on the exact frequency of the originating base station.

(ii) The booster is equipped with automatic gain control circuitry which will limit the total output of the booster to 500 milliwatts under all conditions.

(iii) All such devices are installed with sufficient isolation between receiving and retransmitting circuits to prevent oscillation.

(iv) The power of any emission, except on frequencies within the 460.6375–460.8875 MHz band or on which there is an input signal to the booster, shall be attenuated at least 35 decibels below the total power output of the booster.

(v) In the event control of the booster is impaired due to its activation by signals other than those intended by the licensee to be retransmitted, the licensee shall provide the booster with means of control such that it will be activated only by signals intended to be retransmitted, and boosters so provided with such means of control shall also be provided with an automatic time-delay or clock device which will deactivate the booster not more than three minutes after its activation.

(vi) If signal boosters are to be used in conjunction with other facilities, the number of such boosters must be stated on the license application.

This frequency may also be assigned to low power (2 watts or less) stations in the Business Radio Service for use in areas removed by 8 km. (5 mi.) from the boundaries of airports serving any urbanized areas of 200,000 or more population, U.S. Census of Population, 1960, vol. 1 table 23, page 1–50. All such use is restricted to confines of an industrial complex or manufacturing yard area. Finally, this frequency is also available for assignment to stations in the Business Radio Service for use at locations removed by 120 or more km. (75 mi.) from the boundaries of airports in urbanized areas of 200,000 or more population, U.S. Census of Population, 1960, vol. 1 table 23, page 1–50. Maximum permissible output power is 110 watts for this use.

(26) This frequency may be assigned to fixed stations in the Business Radio Service in accordance with the provisions of § 90.261.

(27) Within the boundaries of urbanized areas of 200,000 or more population as defined in the U.S. Census of Population, 1960, vol. 1, table 23, page 1–50, this frequency may be assigned only to persons rendering a central station commercial protection service.

(28) This frequency may be assigned only to persons rendering a central station commercial protection service.

(29) This frequency will be assigned only to stations whose control point location is within 805 m. (½ mi. direct) of the transmitter location. Maximum power output may not exceed 110 watts, and the overall height of the antenna above ground may not exceed 30 m. (100 ft.).

(30) Operation on this frequency is limited to a maximum output power of 35 watts.

(31) Maximum permissible power output for stations on airports is 3 watts. Each station authorized on this frequency will be classified and licensed as a mobile station. Any units of such a station, however, may provide the functions of a base station on a secondary basis to mobile service operations provided that the vertical separation between the control point or ground level and the center of the radiating portion of the antenna of any units so used shall not exceed 8 m. (25 ft.).

(32) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(33) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(34) Assignment of frequencies to operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253).

(1) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available in accordance with § 90.255.

(2) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new station will be authorized in this band, nor will expansion of existing systems be permitted.

(3) Licensees holding a valid authorization on January 1, 1973, to operate on the frequencies 406.025, 406.075 MHz may continue to be authorized for such operations until the expiration of their present license on a secondary basis to stations operating in accordance with the table in Section 2.106 of this Chapter.

(4) Frequencies separated by 12.5 kHz from regularly assigned frequencies in the 457.525–460.650, 460.875–464.975, and 465.875–469.975 MHz bands may be assigned for use by mobile stations of two watts or less output power which may also serve the function of a base, fixed, or mobile relay station. All operation shall be on a secondary, non-interference basis to regularly assigned adjacent frequency operations and shall be entitled to no protection from such stations. Wide area operations will not be authorized. The area of normal day-to-day operation shall be described in the application in terms of a maximum distance from its approximate geographic center (latitude and longitude). Mobile stations, when used as fixed stations, shall be exempt from the limitations of Section 90.75(e). Antennas of mobile stations used as fixed stations communicating with one or more associated stations located within 45 degrees of azimuth shall be directional and have a front to back ratio of at least 15 dB. Except as provided below, the height of the antenna used at any mobile station serving as a base, fixed or mobile relay station may not exceed 7 m. (20 ft.) above the ground.

(i) No limit shall be placed on the length or height above ground of any commercially manufactured radiating transmission line when the transmission line is terminated in a non-radiating load and is routed at least 7 m. (20 ft.) interior to the edge of any structure or is routed below ground level.

(ii) Sea-based stations may utilize antennas mounted not more than 7 m. (20 ft.) above the man-made supporting structure, excluding antenna structures.

(5) Low-power mobile stations of 100 mW or less output power may be assigned any frequency separated by 12.5 kHz from a regularly assigned frequency in the bands 460.650–460.875 MHz and 465.650–465.875 MHz listed in paragraph (c) of this section, for one-way, non-voice biomedical telemetry operations in hospitals, or in medical or convalescent centers.

(e) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of vehicular repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) Frequencies in the ranges 30.56–30.57 MHz, 35.00–35.01 MHz, 35.99–36.00 MHz, and 37.00–37.01 MHz are available for assignment to applicants in this service subject to the provisions of Subpart P, notwithstanding this limitation.

(3) Frequencies in the 457 and 467 MHz bands may be assigned collectively as provided by paragraph (c) (23) of this section notwithstanding this limitation.

(4) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequencies bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239 notwithstanding this limitation.

(f) *Limitation on intinerant operation.* Base or mobile stations being utilized in itinerant operation will be authorized only on base or mobile frequencies that are not restricted to a permanent area of use by the limitation of paragraph (c) (2) of this section.

§ 90.79 Manufacturers radio service.

(a) *Eligibility.* Persons primarily engaged in any of the following manufacturing activities are eligible to hold authorizations in the Manufactuers Radio Service to operate radio stations for transmission of communications essential to such activities of the licensee:

(1) The mechanical or chemical transformation of substances into new products within such establishments as plants, factories, shipyards, or mills which employ, in that process, power-driven machines and materials-handling equipment.

(2) The assembly of components of manufactured products within such establishments as plants, factories, shipyards, or mills where the new product is neither a new structure nor other fixed improvement. Establishments primarily engaged in the wholesale or retail trade, or in service activities, even though they fabricate or assemble any or all the products or commodities handled, are not eligible in this service.

(3) The providing of supporting services or materials by a corporation to its parent corporation, to another subsidiary of its parent or to its own subsidiary, where such supporting services or materials are directly related to those regular activities of such parent or subsidiary which constitute the basis for eligibility in this service.

(b) *Special limitations on use.* The following limitations are applicable to the use of stations in this service:

(1) Authorized stations may be used only for the transmission of communications related to the operation of the plant, such as for security, production control or materials-handling. Communications related to the retail distribution of the licensees products are not permitted.

(2) Base station will only be authorized in this service for operation at specified and permanent locations.

(c) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Manufacturers Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in paragraph (d) of this section:

Manufacturers radio service frequency table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
70.02	Mobile	1, 2
72.04	do	1, 2
72.06	do	1, 2
72.08	do	1, 2, 3
72.10	do	1, 2
72.12	do	1, 2
72.14	do	1, 2
72.16	do	1, 2, 3
72.18	do	1, 2
72.20	do	1, 2
72.22	do	1, 2
72.24	do	1, 2, 3
72.26	do	1, 2
72.28	do	1, 2
72.30	do	1, 2
72.32	do	1, 2, 3
72.34	do	1, 2
72.36	do	1, 2
72.38	do	1, 2
72.40	do	1, 2, 3
72.44	do	2, 4
72.48	do	2, 4
72.52	do	2, 4
72.56	do	2, 4
72.60	do	2, 4
75.44	do	2, 4
75.48	do	2, 4
75.52	do	2, 4
75.56	do	2, 4
75.60	do	2, 4
153.050	Base or mobile	5
153.065	do	5
153.080	do	5
153.095	do	5
153.110	do	5
153.125	do	5
153.140	do	5
153.155	do	5
153.170	do	5
153.185	do	5
153.200	do	5
153.215	do	5
153.230	do	5
153.245	do	5
153.260	do	5
153.275	do	5
153.290	do	5
153.305	do	5
153.320	do	5
153.335	do	5
153.350	do	5
153.365	do	5
153.380	do	5
153.395	do	5
158.280	do	5
158.295	do	5
158.310	do	5
158.325	do	5
158.415	do	5
158.430	do	5
173.20375	Fixed or mobile	6, 7, 8, 10
173.2100	do	7, 8, 9, 10
173.3900	do	7, 8, 9, 10
173.39625	do	6, 7, 9, 10
216–220	Base or mobile	11

Frequency or band	Class of station(s)	Limitations
Megahertz:		
450–470	Fixed	12
451.175	Base or mobile	13
451.225	do	13
451.275	do	13
451.375	do	13
451.425	do	13
451.475	do	13
451.525	do	13
451.575	do	13
451.625	do	13
451.675	do	13
456.175	Mobile	13
456.225	do	13
456.275	do	13
456.375	do	13
456.425	do	13
456.475	do	13
456.525	do	13
456.575	do	13
456.625	do	13
456.675	do	13
462.200	Base or mobile	
462.225	do	
462.250	do	
462.275	do	
462.300	do	
462.325	do	
462.350	do	
462.375	do	
462.400	do	
462.425	do	
462.450	do	
462.475	do	13
462.500	do	
462.525	do	13
467.200	Mobile	
467.225	do	
467.250	do	
467.275	do	
467.300	do	
467.325	do	
467.350	do	
467.375	do	
467.400	do	
467.425	do	
467.450	do	
467.475	do	13
467.500	do	
467.525	do	13
470–512	Base or mobile	14
806–821	Mobile	15
851–866	Base or mobile	15
952 and above.	Operational fixed	16
1427 to 1435	Operational fixed, base or mobile.	1
2450 to 2500	Base or mobile	17
8400 to 8500	do	18
10,550 to 10,680	do	

(d) Explanation of assignment limitations appearing in the frequency tabulation of paragraph (c) of this section:

(1) This frequency is shared with fixed stations in other services and is subject to no protection from interference.

(2) All communications on this frequency must be conducted within the boundaries or confines of plant, factory, shipyards, mill, or other manufacturing area. All operations on this frequency are subject to the provisions of § 90.257(b).

(3) This frequency is shared with the Radio Control (R/C) Service, part of the Personal Radio Services, where it is used solely for the radio control of models.

(4) This frequency is available on a shared basis in the Manufacturers, Special Industrial and Railroad Radio Services and interservice coordination is required.

(5) This frequency is shared with the Forest Products and Petroleum Radio Services. The output power of all transmitters operating on this frequency shall not exceed 110 watts.

(6) For FM transmitters the sum of the highest modulating frequency in hertz and the amount of frequency deviation or swing in hertz may not exceed 2800 Hz and the maximum frequency deviation may not exceed 2.5 kHz. For AM transmitters the highest modulating frequency may not exceed 2000 Hz. The carrier frequency must be maintained within 0.0005 percent of the center of the frequency band, and the authorized bandwidth may not exceed 6 kHz.

(7) In this frequency band the maximum power output of the transmitter may not exceed 50 watts for fixed stations and 1 watt for mobile stations. A1, A2, F1, or F2 emission may be authorized, and mobile stations used to control remote objects and devices may be operated in the continuous transmit mode.

(8) For FM transmitters the sum of the highest modulating frequency in hertz and the amount of frequency deviation or swing in hertz may not exceed 1700 Hz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1200 Hz. The carrier frequency must be maintained within 0.0005 percent of the center of the frequency band, and the authorized bandwidth may not exceed 3 kHz.

(9) This frequency band is available on a shared basis with the Local Government and several Industrial Radio Services. Evidence of interservice coordination is required.

(10) Operational fixed stations must employ directional antennas having a front-to-back ratio of at least 20 db. Omnidirectional antennas having unity gain may be employed for stations communicating with at least three receiving locations separated by 160° of azimuth.

(11) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(12) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is on a secondary basis to stations in the Public Safety and Land Transportation Radio Services where they are assigned for land mobile operations.

(13) This frequency is available on a shared basis in the Power, Petroleum, Forest Products, Manufacturers, and Telephone Maintenance Radio Services. It may be assigned only when all of the frequencies in the 450–470 MHz band allocated to the service in which the applicant is primarily eligible are assigned within 56 km. (35 mi.) of the proposed base station. Applications for this frequency must be coordinated with all five services.

(14) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(15) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(16) Assignment of frequencies for operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(17) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific or medical (ISM) devices.

(18) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart P.

(e) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service: (See also 90.253.)

(1) Frequencies may be substituted for those available below 25 MHz in accordance with the provisions of § 90.263.

(2) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available in accordance with § 90.255.

(3) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(f) *Limitation on number of frequencies assignable.* Normally only one frequency or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of vehicular repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) Frequencies in the ranges 30.56–30.57 MHz, 35.00–35.01 MHz, 35.99–36.00 MHz, and 37.00–37.01 MHz are available for assignment to applicants in this service subject to the provisions of Subpart P notwithstaning this limitation.

(3) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

§ 90.81 Telephone maintenance radio service.

(a) *Eligibility.* Communications common carriers primarily engaged in rendering a wire-line or wire-line and radio communications service to the public for hire, and radio communications common carriers authorized in the Point-to-Point Microwave Radio Service under Part 21 are eligible to hold authorizations in the Telephone Maintenance Radio Service to operate radio stations for transmission of communications in accordance with paragraph (b) of this section.

(b) *Special limitations on use.* The facilities authorized in this service shall only be used for transmission of communications directly related to the construction, repair, maintenance or operation of communications common carrier facilities. The facilities authorized in this service shall not be used for administrative or other sales related business activities of the licensee, nor for the transmission of any common carrier or public correspondence communication.

(c) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Telephone Maintenance Radio Service, together with the class of station(s) to which they are normally assigned and the specific assignment limitations which are explained in parargaph (d) of this section:

Telephone maintenance radio service frequency table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
35.16	Base or mobile	1
43.16	Mobile	1
151.985	Base or mobile	1
158.34	Mobile	1
216 to 220	Base or mobile	2
450 to 470	Fixed	3
451.175	Base or mobile	4
451.225	do	4
451.275	do	4
451.300	do	1
451.325	do	1
451.350	do	1
451.375	do	4
451.400	do	1
451.425	do	4
451.450	do	1
451.475	do	4
451.500	do	1
451.525	do	4
451.575	do	4
451.625	do	4
451.675	do	4
456.175	Mobile	4
456.225	do	4
456.275	do	4
456.300	do	1,5
456.325	do	1,5
456.350	do	1,5
456.375	do	4
456.400	do	1,5
456.425	do	4
456.450	do	1,5
456.475	do	4
456.500	do	1,5
456.525	do	4
456.575	do	4
456.625	do	4
456.675	do	4
462.475	Base or mobile	4
462.525	do	4
467.475	Mobile	4
467.525	do	4
470 to 512	Base or mobile	6
806 to 821	Mobile	7
851 to 866	Base or mobile	7
952 and above.	Operational fixed	8
1427 to 1435	Operational fixed, base or mobile.	2
2450 to 2500	Base or mobile	9
8400 to 8500	do	10
10,550 to 10,680.	do	

(d) Explanation of assignment limitations appearing in the frequency table of paragraph (c) of this section:

(1) This frequency may be assigned only to a communications common carrier primarily engaged in rendering a wire-line or wire-line and radio communications service to the public for hire.

(2) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(3) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public Safety and Land Transportation Radio Services where they are assigned for land mobile operations.

(4) This frequency is available on a shared basis in the Power, Petroleum, Forest Products, Manufacturers, and Telephone Maintenance Radio Services. Except for assignments made to non-wire-line radiocommunications common carriers authorized in the Point-to-Point Microwave Radio Service under Part 21, it may be assigned only when all of the base and mobile frequencies in the 450–470 MHz band for which the applicant is primarily eligible are assigned within 35 miles (56 km) of the proposed base station. Applications for this frequency must be coordinated with all five services.

(5) This frequency may be assigned to auxiliary test stations.

(6) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(7) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(8) Assignment of frequencies to operational-fixed stations in the bands 952 and above is governed by Part 94 of this Chapter.

(9) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific or medical (ISM) devices.

(10) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart P.

(e) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service: (See also 90.253)

(1) The frequencies 27.235, 27.245, 27.255, 27. 265, and 27.275 MHz are available in accordance with § 90.255.

(2) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(f) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of vehicular repeaters in accordance with § 90.247 notwithstanding this limitation;

(2) Frequencies in the ranges 30.56–30.57 MHz, 35.00–35.01 MHz, 35.99–36.00 MHz, and 37.00–37.01 MHz are available for assignment of applicants in this service subject to the provisions of Subpart P. notwithstanding this limitation.

(3) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

Subpart E—Land Transportation Radio Services

§ 90.85 Scope.

The Land Transportation Radio Services include the Motor Carrier, Railroad, Taxicab and Automobile Emergency Radio Services. Rules as to eligibility for licensing, permissible communications, assignable frequencies, and any special requirements as to each of these radio services are set forth in the following sections.

§ 90.87 General eligibility.

In addition to the eligibility shown in each Land Transportation Radio Service, eligibility is also provided for any corporation proposing to furnish nonprofit radiocommunication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary provided the party served is regularly engaged in any of the eligibility activities set forth in the particular service involved. Eligibility is also provided for a nonprofit corporation or association that is organized for the purpose of furnishing a radiocommunication service to persons actually engaged in any of the eligibility activities set forth in the particular service involved subject to the cooperative use provisions of § 90.179.

§ 90.89 Motor carrier radio service.

(a) *Eligibility.* Persons primarily engaged in providing a common or contract motor carrier transportation service in any of the following activities are eligible to hold authorizations in the Motor Carrier Radio Service to operate radio stations for transmission of communications essential to such activities of the licensee. For purposes of this rule, an urban area is defined as being one or more contiguous, incorporated or unincorporated cities, boroughs, towns, or villages, having aggregate population of 2500 or more persons.

(1) The transportation of passengers between urban areas.

(2) The transportation of property between urban areas.

(3) The transportation of passengers within a single urban area.

(4) The transporation, local distribution or collection of property within a single urban area.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Motor Carrier Radio Service, together with the class of station(s) to which they are normally assigned; and the specific assignment limitations, which are explained in paragraph (c) of this section:

Motor carrier radio service frequency table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
30.66	Base or mobile	1, 2
30.74	do	1, 2
30.82	do	1, 3
30.86	do	1, 3
30.90	do	1, 3
30.94	do	1, 3
30.98	do	1, 3
31.02	do	1, 3
31.06	do	1, 3
31.08	do	1
31.10	do	1, 3
31.12	do	1
31.14	do	1, 3
43.70	do	4
43.72	do	4
43.74	do	4
43.76	do	4
43.78	do	4
43.80	do	4
43.82	do	4
43.84	do	4
43.86	do	5, 6
43.88	do	5, 6
43.90	do	5, 6
43.92	do	5, 6
43.94	do	5, 6
43.96	do	5
43.98	do	5
44.00	do	5
44.02	do	5
44.04	do	5
44.06	do	5
44.08	do	5
44.10	do	5
44.12	do	5
44.14	do	5
44.16	do	5
44.18	do	5
44.20	do	5
44.22	do	5
44.24	do	5
44.26	do	5
44.28	do	5
44.30	do	5
44.32	do	5
44.34	do	5
44.36	do	5, 6
44.38	do	5, 6
44.40	do	5, 6
44.42	do	5, 6
44.44	do	5, 6
44.46	do	1
44.48	do	1
44.50	do	1
44.52	do	1
44.54	do	1
44.56	do	1
44.58	do	1
44.60	do	1
72.0–76.0	Operational fixed	7
159.495	Base or mobile	8
159.510	do	8
159.525	do	8
159.540	do	8
159.555	do	8
159.570	do	8
159.585	do	8
159.600	do	8
159.615	do	8
159.630	do	8
159.645	do	8
159.660	do	8
159.675	do	8
159.690	do	8
159.705	do	8
159.720	do	8
159.735	do	8
159.750	do	8
159.765	do	8
159.780	do	8
159.795	do	8
159.810	do	8
159.825	do	8
159.840	do	8
159.855	do	8
159.870	do	8
159.885	do	8
159.900	do	8
159.915	do	8
159.930	do	8
159.945	do	8
159.960	do	8
159.975	do	8
159.990	do	8
160.005	do	8
160.020	do	8
160.035	do	8
160.050	do	8
160.065	do	8
160.080	do	8
160.095	do	8
160.110	do	8
160.125	do	8
160.140	do	8
160.155	do	8
160.170	do	8
160.185	do	8
160.200	do	8
450 to 470	Fixed	9
452.325	Base or mobile	10
452.375	do	10
452.425	do	10
452.475	do	10
452.625	do	
452.650	do	
452.675	do	
452.700	do	
452.725	do	
452.750	do	
452.775	do	10
452.800	do	
452.825	do	10
452.850	do	
452.875	do	10
457.325	Mobile	10
457.375	do	10
457.465	do	10
457.475	do	10
457.625	do	
457.650	do	
457.675	do	
457.700	do	
457.725	do	
457.750	do	
457.775	do	10
457.800	do	
457.825	do	10
457.850	do	
457.875	do	10
470 to 512	Base or mobile	11
806 to 821	Mobile	12
851 to 866	Base or mobile	12
952 and above	Operational fixed	13
1427 to 1435	Operational fixed, base or mobile	14
2450 to 2500	Base or mobile	15
8400 to 8500	do	16
10,550 to 10,680	do	

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) This frequency is available for assignment in this service only to common and contract motor carriers of passengers within a single urban area.

(2) This frequency is available on a shared basis with the Petroleum Radio Service.

(3) This frequency is available on a shared basis with stations in the Forestry-Conservation Radio Service.

(4) This frequency is available for assignment in this service only to common and contract motor carriers of passengers between urban areas.

(5) This frequency is available for assignment in this service only to common and contract motor carriers of property between urban areas.

(6) In addition to single frequency operation, this frequency is available to base and mobile stations for the paired frequency mode of operation. For two frequency systems, the separation between base and mobile transmit frequencies is 500 kHz with the base stations transmitting on the higher of the two frequencies.

(7) The frequencies available for use at operational fixed stations in the band 72–76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257.

(8) This frequency is available for assignment in this service only to common and contract motor carriers of property.

(9) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public Safety and Industrial Radio Services where they are assigned for land mobile operations.

(10) This frequency is shared in the Motor Carrier and Railroad Radio Services. It may be assigned only when all of the frequencies in the 450–460 MHz band allocated to the service in which the applicant is primarily eligible are assigned within 35 miles (56 km) of the proposed base station. Applications for these frequencies must be coordinated with all services involved.

(11) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(12) Subpart M contains rules for assignment of frequencies in 806–821 and 851–866 MHz bands.

(13) Assignment of frequencies for operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(14) This frequency is available to stations in this service subject to the provisions of § 90.259.

(15) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific or medical (ISM) devices.

(16) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart P.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service: (See also § 90.253).

(1) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available in accordance with § 90.255.

(2) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(3) The frequency band 33.00–33.01 MHz may be used for developmental operations subject to the provisions of Subpart P. Any type of emission other than pulsed emission may be used if the bandwidth occupied by the emission is contained within the assigned frequency band.

(e) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of vehicular repeaters in accordance with § 90.247, notwithstanding this limitation.

(2) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands,

and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

§ 90.91 Railroad radio service.

(a) *Eligibility.* Railroad common carriers which are regularly engaged in the transportation of passengers or property when such passengers or property are transported over all or part of their route by railroad are eligible to hold authorizations in the Railroad Radio Service to operate radio stations for transmission of communications and to assure safety of operations essential to such activities of the licensee.

(b) The following limitations are applicable to the use of stations licensed in this service:

(1) Stations licensed in this service may be used to provide communications service for the operation of land motor vehicles that are engaged in the pick-up, delivery, or transfer between railroad stations of property that is shipped, continued in, or destined for shipment by railroad common carriers. When such operations are conducted on frequencies in the 160–162 MHz band, they are on a secondary basis to regular railroad radio communications.

(2) Operational Fixed stations licensed to operate in this service may be used by railroads notwithstanding the provisions of § 90.415(b) to handle public telegraph messages as agents of telegraph common carriers in those instances where such public telegraph service cannot be efficiently provided through other railroad facilities.

(c) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Railroad Radio Service, together with the class of stations(s) to which they are normally assigned; and the specific assignment limitations, which are explained in paragraph (d) of this section:

Railroad radio service frequency table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
72.0 to 76.0	Operational fixed	1
72.44	Mobile	2
72.48	do	2
72.52	do	2
72.56	do	2
75.60	do	2
75.44	do	2
75.48	do	2
75.52	do	2
75.56	do	2
75.60	do	2
160.215	Base or mobile	3, 4
160.230	do	3, 4
160.245	do	3, 4
160.260	do	3, 4
160.275	do	3, 4
160.290	do	3, 4
160.305	do	3, 4
160.320	do	3, 4
160.335	do	3, 4
160.350	do	3, 4
160.365	do	3, 4
160.380	do	3, 4
160.395	do	3, 4
160.410	do	3, 4, 5
160.425	do	3, 4, 5
160.440	do	3, 4, 5
160.455	do	3, 4, 5
160.470	do	3, 4, 5
160.485	do	3, 4, 5
160.500	do	3, 4, 5
160.515	do	3, 4, 5
160.530	do	3, 4, 5
160.545	do	3, 4, 5
160.560	do	3, 4, 5
160.575	do	3, 4, 5
160.590	do	3, 4, 5
160.605	do	3, 4, 5
160.620	do	3, 4
160.635	do	3, 4
160.650	do	3, 4
160.665	do	3, 4
160.680	do	3, 4
160.695	do	3, 4
160.710	do	3, 4
160.725	do	3, 4
160.740	do	3, 4
160.755	do	3, 4
160.770	do	3, 4
160.785	do	3, 4
160.800	do	3, 4
160.815	do	3, 4
160.830	do	3, 4
160.845	do	3, 4
160.860	do	3, 4, 6
160.875	do	3, 4, 6
160.890	do	3, 4, 6
160.905	do	3, 4, 6
160.920	do	3, 4, 6
160.935	do	3, 4, 6
160.950	do	3, 4, 6
160.965	do	3, 4, 6
160.980	do	3, 4, 6
160.995	do	3, 4, 6
161.010	do	3, 4, 6
161.025	do	3, 4, 6
161.040	do	3, 4, 6
161.055	do	3, 4, 6
161.070	do	3, 4, 6
161.085	do	3, 4, 6
161.100	do	3, 4, 6
161.115	do	3, 4, 6
161.130	do	3, 4, 6
161.145	do	3, 4, 6
161.160	do	3, 4, 6
161.175	do	3, 4, 6
161.190	do	3, 4, 6
161.205	do	3, 4, 6
161.220	do	3, 4, 6
161.235	do	3, 4, 6
161.250	do	3, 4, 6
161.265	do	3, 4, 6
161.280	do	3, 4, 6
161.295	do	3, 4, 6
161.310	do	3, 4, 6
161.325	do	3, 4, 6
161.340	do	3, 4, 6
161.355	do	3, 4, 6
161.370	do	3, 4, 6
161.385	do	3, 4, 7
161.400	do	3, 4, 7
161.415	do	3, 4, 7
161.430	do	3, 4, 7
161.445	do	3, 4, 7
161.460	do	3, 4, 7
161.475	do	3, 4, 7
161.490	do	3, 4, 7
161.505	do	3, 4, 7
161.520	do	3, 4, 7
161.535	do	3, 4, 7
161.550	do	3, 4, 7
161.565	do	3, 4, 7
169.425	Operational fixed	8
169.450	do	8
169.475	do	8
169.500	do	8
170.225	do	8
170.250	do	8
170.275	do	8
170.300	do	8
170.325	do	8
171.025	do	8
171.050	do	8
171.075	do	8
171.100	do	8
171.125	do	8
171.825	do	8
171.850	do	8
171.875	do	8
171.900	do	8
171.925	do	8
406.125	do	8
406.175	do	8
409.675	do	8
409.725	do	8
412.625	do	8
412.675	do	8
412.725	do	8
412.775	do	8
450–470	do	9
452.325	Base or mobile	10
452.375	do	10
452.425	do	10
452.475	do	10
452.775	do	10
452.825	do	10
452.875	do	10
452.900	do	10
452.925	do	11
452.950	do	11
457.325	Mobile	10
457.375	do	10
457.425	do	10
457.475	do	10
457.775	do	10
457.825	do	10
457.875	do	10
457.900	do	10
457.925	do	11
457.950	do	11
470 to 512	Base or mobile	12
806 to 821	Mobile	13
851 to 866	Base or mobile	13
952 and above	Operational fixed	14
1427 to 1435	Operational fixed, base or mobile.	15
2450 to 2500	Base or mobile	16
8400 to 8500	do	17
10,550 to 10,680.	do	

(d) Explanation of assignment limitations appearing in the frequency table of paragraph (c) of this section:

(1) The frequencies available for assignment to operational fixed stations in the band 72.0 to 76.0 MHz are listed in § 90.257(a)(1). These frequencies which are shared with other services, are available only in accordance with the provisions of § 90.257.

(2) This frequency is available on a shared basis in the Manufacturers, Special Industrial, and Railroad Radio Services and interservice coordination is required. All communications must be conducted within the boundaries or confines of railroad terminals or yards. All operations on this frequency are subject to the provisions of § 90.257(b).

(3) This frequency may be used for the following:

(i) End-to-end, fixed point-to-train, or train-to-train communications in connection with the operation of railroad trains over a track or tracks extending through yards and between stations upon which trains are operated by timetable, train order, or both, or the use of which is governed by block signals.

(ii) Intercommunication between adjacent base stations, provided interference is not caused to communications involving radio stations aboard railroad rolling stock.

(iii) Transmission of tone signals for signalling purposes or for remote control of locomotives, including slave locomotives placed within a train to assist the lead locomotive by providing, among other functions auxiliary starting, pulling and braking actions; and radio controlled cab indicator devices that are placed within a locomotive to give visual signals to the operator of the locomotive.

(4) This frequency may also be used for the transmission of tone or voice communications, including such communications when prerecorded, for purposes of automatically indicating abnormal conditions of trackage and railroad rolling stock when in motion, on a secondary basis to other stations on this frequency. All such operations shall be subject to the following:

(i) The output power shall not exceed 30 watts.

(ii) The bandwidth used shall not exceed that authorized to the licensee for voice transmissions on the frequency concerned.

(iii) The station shall be so designed and installed that it can normaly be activated only by its associated automatic control equipment and, in addition, it shall be equipped with a time delay or clock device which will deactivate the station within three (3) minutes following activation by the last car in the train.

(iv) Stations authorized pursuant to the provisions of this subparagraph are exempt from the station identification requirements of § 90.425.

(5) This frequeney is shared with and must be coordinated with the Special Industrial Radio Service in Puerto Rico and the Virgin Islands.

(6) In Puerto Rico and the Virgin Islands only, this frequency is available on a shared basis with remote pickup broadcast stations.

(7) In Puerto Rico and the Virgin Islands only, this frequency is not available to stations operating in the Railroad Radio Service.

(8) This frequency will be assigned only for transmitting hydrological or meteorological data. The use of this frequency is on a secondary basis to Federal Government stations, and the hydrological or meteorological data being handled must be made available on request to governmental agencies. Other provisions of this part notwithstanding, an operational fixed station operating on this frequency shall not engage in communications with any station in the mobile service unless written authorization to do so has been obtained from the Commission. Persons who desire to operate stations on this frequency should communicate with the Commission for instructions concerning the procedure to be followed in filing formal application.

(9) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to status in the Public Safety and Industrial Radio Services where they are assigned for land mobile operations.

(10) This frequency is shared in the Motor Carrier and Railroad Radio Services. It may be assigned only when all of the frequencies in the 450–460 MHz band allocated to the service in which the applicant is primarily eligible are assigned within 35 miles (56 km) of the proposed base station. Applications for this frequency must be coordinated with all services involved.

(11) This frequency may be assigned primarily for stations used for the purpose of controlling slave locomotives that are placed within a train to assist the lead locomotive by providing, among other functions, auxiliary starting, pulling, and braking actions. Additionally, on a secondary basis this frequency may be assigned for remote control of all types of locomotives and, within a railroad yard or terminal area, for remote control of cab indicator devices placed with a locomotive to give visual signals to the operator of the locomotive. (A1, A2, F1 or F2 emissions may be authorized).

(12) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(13) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(14) Assignment of frequencies for operational-fixed stations in the band 952 MHz and above is governed by Part 94 of this Chapter.

(15) This frequency band is available to stations in this services subject to the provisions of § 90.259.

(16) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific or medical (ISM) devices.

(17) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart P.

(e) *Additional frequency available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service: (See also 90.253).

(1) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available in accordance with § 90.255.

(2) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted.

(3) Base and mobile stations authorized as of April 1, 1968, to operate on frequency 161.61 MHz may continue to be authorized for such operation on a secondary basis to the Maritime Mobile service. The licensees of such stations may renew, modify, reinstate, or assign their licenses in those cases where such assignment accompanies a change of ownership of the licensee's business to the assignee, and may expand existing systems when using that frequency; however, they will not be authorized to establish any new systems on the frequency.

(4) Stations authorized for operation on or before June 11, 1962, on the frequencies 169.575, 170.375, 171.175, 171.975, or 406.050 MHz may continue to be authorized for such operation on a secondary basis to Government stations.

(5) The frequency band 33.00–33.01 MHz may be used for developmental operation subject to the provisions of Subpart P. Any type of emission other than pulsed emission may be used if the bandwidth occupied by the emission is contained within the assigned frequency band.

(f) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of vehicular repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.-239, notwithstanding this limitation.

§ 90.93 Taxicab radio service.

(a) *Eligibility.* Persons regularly engaged in furnishing to the public for hire a nonscheduled passenger land transportation service (which may also include the occasional transport of small items of property) not operated over a regular route or between established terminals are eligible to hold authorizations in the Taxicab Radio Service to operate radio stations for the transmission of communications essential to such activities of the licensee.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Taxicab Radio Service, together with the class of station(s) to which they are normally assigned; and the specific assignment limitations, which are explained in paragraph (c) of this section:

Taxicab radio service frequency table

Frequency or band	Class of station(s)	Limitations
Megaherts:		
152.270	Base or mobile	
152.285	do	1
152.300	do	1, 2
152.315	do	1
152.330	do	
152.345	do	1
152.360	do	1, 2
152.375	do	1
152.390	do	
152.405	do	1
152.420	do	1, 2
152.435	do	1
152.450	do	
157.530	Mobile	
157.545	do	1
157.560	do	1, 2
157.575	do	1
157.590	do	
157.605	do	1
157.620	do	1, 2
157.635	do	1
157.650	do	
157.665	do	1
157.680	do	1, 2
157.695	do	1
157.710	do	
450 to 470	Fixed	3
452.050	Base or mobile	
452.100	do	
452.150	do	
452.200	do	
452.225	do	
452.250	do	
452.275	do	
452.300	do	
452.350	do	
452.400	do	
452.450	do	
452.500	do	
457.050	Mobile	
457.100	do	
457.150	do	
457.200	do	
457.225	do	
457.250	do	
457.275	do	
457.300	do	
457.350	do	
457.400	do	
457.450	do	
457.500	do	
470 to 512	Base or mobile	4

Frequency or band	Class of station(s)	Limitations
Megahertz:		
806 to 821	Mobile	5
851 to 866	Base or mobile	5
952 and above.	Operational fixed	6
1427 to 1435	Base, mobile, or operational fixed.	7
2450 to 2500	Base or mobile	8
8400 to 8500	do	9
10,550 to 10,680.	do	

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) This frequency is available for assignment only to base or mobile stations operating wholly within standard Metropolitan Areas having 50,000 or more population (1950 Census).

(2) This frequency is available on a secondary basis to Business Radio Service licensees for use at stations outside Standard Metropolitan Areas having 50,000 or more population (1950 Census).

(3) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public-Safety and Industrial Radio Services where they are assigned for land mobile operations.

(4) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(5) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(6) Assignment of frequencies for operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(7) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(8) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific or medical (ISM) devices.

(9) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart P.

(d) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that: (See also § 90.253).

(1) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available in accordance with § 90.255.

(2) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(3) The frequency band 33.00–33.01 MHz may be used for developmental operation subject to the provisions of Subpart P. Any type of emission other than pulsed emission may be used if the bandwidth occupied by the emission is contained within the assigned frequency band.

§ 90.95 Automobile emergency radio service.

(a) *Eligibility.* Persons regularly engaged in any of the following activities are eligible to hold authorizations in the Automobile Emergency Radio Service to operate radio stations for transmission of communications required for dispatching repair trucks, tow trucks or other road service vehicles to disabled vehicles.

(1) The operation of a private emergency road service for disabled vehicles by associations of owners of private automobiles.

(2) The business of providing to the general public an emergency road service for disabled vehicles.

(b) *Special permissible communications.* On a secondary basis, the transmission of communications by associations of owners of private automobiles which provide emergency road service for the purpose of reporting traffic conditions is authorized.

(c) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Automobile Emergency Radio Service, together with the class of station(s) to which they are normally assigned; and the specific assignment limitations which are explained in paragraph (c) of this section:

Automobile emergency radio service frequency table

Frequency or band	Class of station(s)	Limitations
Megahertz:		
150.815	Base or mobile	1, 2, 3
150.830	do	1, 2, 3
150.845	do	1, 2, 3
150.860	do	1, 2, 3
150.875	do	1, 2, 3
150.890	do	1, 2, 3
150.905	do	3, 4
150.920	do	3, 4
150.935	do	3, 4
150.950	do	3, 4
150.965	do	3, 4
157.470	do	5, 6
157.485	do	5, 6
157.500	do	5, 6
157.515	do	5, 6
450 to 470	Fixed	7
452.525	Base or mobile	8
452.550	do	8
452.575	do	8
452.600	do	8
470 to 512	Base or mobile	9
806 to 821	Mobile	10
851 to 866	Base or mobile	10
952 and above.	Operational fixed	11
1427 to 1435.	Operational fixed, base, or mobile.	12
2450 to 2500.	Base or mobile	13
8400 to 8500.	do	14
10,550 to 10,680.	do	

(d) Explanation of assignment limitations appearing in the frequency table of paragraph (c) of this section:

(1) This frequency is available only for stations (other than those aboard aircraft) which are operated by or on behalf of persons who provide to the general public an emergency road service for disabled vehicles.

(2) Only one of the frequencies 150.815, 150.830, 150.845, 150.860, 150.875, or 150.890 MHz may be assigned to the same licensee in a given area.

(3) This frequency is not available to stations in this service in Puerto Rico or the Virgin Islands.

(4) This frequency is available for assignment to base stations and to mobile stations (other than those aboard aircraft) which are operated by or on behalf of associations of owners of private automobiles.

(5) This frequency is available for assignment to stations, other than those aboard aircraft, which are operated by or on behalf of persons who provide to the general public an emergency road service for disabled vehicles: Except that; at the discretion of the Commission this frequency may also be operated by or on behalf of associations of owners of private automobiles upon a showing that all other frequencies available for assignment to such stations are currently assigned to other stations for use in the area concerned and that the use of the requested frequency, in each case, will be less likely to result in mutual harmful interference than would the use of a frequency otherwise available to the station.

(6) Only one of the frequencies 157.470, 157.485, 157.500, or 157.515 MHz may be assigned to the same licensee in a given area.

(7) The frequencies available for use at fixed stations in this band, and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Public-Safety and Industrial Radio Services where they are assigned for land mobile operations.

(8) This frequency is available for assignment to stations which are operated by or on behalf of associations of owners of private automobiles for single-frequency operation.

(9) Subpart L contains rules for assignment of frequencies in the 470–512 MHz band.

(10) Subpart M contains rules for assignment of frequencies in the 806–821 and 851–866 MHz bands.

(11) Assignment of frequencies for operational-fixed stations in the bands 952 MHz and above is governed by Part 94 of this Chapter.

(12) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(13) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices.

(14) Use of this frequency band is limited to developmental operation and is subject to the provisions of Subpart P.

(e) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area.

The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that: (See also § 90.253.)

(1) The frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz are available in accordance with § 90.255.

(2) Frequencies in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands, and the frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–027 MHz may be assigned for the operation of Automatic Vehicle Monitoring (AVM) systems in accordance with § 90.239, notwithstanding this limitation.

(3) The frequency band 33.00–33.01 MHz may be used for developmental operation subject to the provisions of Subpart P. Any type of emission other than pulsed emission may be used if the bandwidth occupied by the emission is contained within the assigned frequency band.

Subpart F—Radiolocation Service

§ 90.101 Scope.

The Radiolocation Service accommodates the use of radio methods for determination of direction, distance, speed, or position for purposes other than navigation. Rules as to eligibility for licensing, permissible communications, frequencies available, and any special requirements are set forth in the following section, except that the operation of Automatic Vehicle Monitoring (AVM) systems is governed by interim provisions set forth in § 90.239.

§ 90.103 Radiolocation service.

(a) *Eligibility.* The following persons are eligible for authorizations in the Radiolocation Service to operate stations to determine distance, direction, speed, or position by means of radiolocation devices, for purposes other than navigation:

(1) Persons having a requirement to provide a radiolocation service in connection with their own activities.

(2) A corporation or association that will furnish radiolocation service to other persons.

(3) A corporation that will furnish a nonprofit radio communication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary where the party to be served is regularly engaged in any of the eligibility activities set forth in this paragraph.

(b) *Frequencies available.* The following table indicates frequencies available for assignment to stations in the Radiolocation Service, together with the class of station(s) to which they are normally assigned, and the specific assignment limitations, which are explained in paragraph (c) of this section:

Radiolocation service frequency table

Frequency or band	Class of station(s)	Limitations
Kilohertz:		
70 to 90	Radiolocation land or mobile.	1
90 to 110	Radiolocation land	
110 to 190	Radiolocation land or mobile.	3
1605 to 1715	do	4, 5, 6
1715 to 1750	do	5, 6
1750 to 1800	do	5, 6, 7
3230 to 3400	do	6, 8
Megahertz:		
2450 to 2500	do	9
2900 to 3100	do	10, 11
3100 to 3300	do	12
3300 to 3500	do	12, 13
3500 to 3700	do	12
5250 to 5350	do	12
5350 to 5460	do	10, 14
5460 to 5470	do	10, 15
5470 to 5600	do	10, 11
5600 to 5650	do	10, 16
8500 to 9000	do	12, 17
9000 to 9200	do	10, 14
9200 to 9300	do	12
9300 to 9500	do	10, 15, 18
9500 to 10,000	do	12
10,000 to 10,500	do	12, 13, 19
10,500 to 10,550	do	20
13,400 to 14,000	do	12
15,700 to 17,700	do	12
24,050 to 24,500	do	12
33,400 to 36,000	do	12

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) This frequency band is shared with and stations operating in this frequency band in this service are on a secondary basis to stations licensed in the International Fixed Service (Part 23 of the Commission's Rules).

(2) This frequency band is shared with and stations operating in this frequency band in this service are on a secondary basis to the LORAN Navigation System; all operations are limited to radiolocation land stations in accordance with Footnote US104, Section 2.106 of this Chapter.

(3) This frequency band is shared with and stations operating in this frequency band in this service are on a secondary basis to stations licensed in the International Fixed Service (Part 23 of this Chapter) and the Maritime Mobile Service (Part 83 of this Chapter).

(4) Non-Government radiolocation service in this band is on a secondary basis to stations in the aeronautical radionavigation service operating on 1638 or 1708 kHz.

(5) Station assignments on frequencies in this band will be made subject to the conditions that the maximum output power shall not exceed 375 watts and the maximum authorized bandwidth shall not exceed 2 kHz.

(6) Because of the operation of stations having priority on the same or adjacent frequencies in this or in other countries, frequency assignments in this band may either be unavailable or may be subject to certain technical or operational limitations. Therefore, applications for frequency assignments in this band shall include information concerning the transmitter output power; the type and directional characteristics of the antenna and the minimum hours of operation (GMT).

(7) This band is shared with the Disaster Communications Service (Part 99) and operations are on a secondary basis to that service between local sunset and local sunrise, or at any time during an actual or imminent disaster. Local sunrise and sunset times shall be derived from the 1946 American Nautical Almanac. Each frequency assignment in this band is on an exclusive basis within the daytime primary service area to which assigned. The daytime primary service area is the area where the signal intensities are adequate for radiolocation purposes during the hours from sunrise to sunset from all stations in the radiolocation system of which the station in question is a part; that is, the primary service area of the station coincides with the primary service area of the system. The normal minimum geographical separation between stations of different licensees shall be at least 580 km. (360 mi.) when the stations are operated on the same frequency or on different frequencies separated by less than 3 kHz. Where geographical separation of less than 580 km. (360 mi.) is desired under these circumstances it must be shown that the desired separation will result in protection ratio of at least 20 decibels throughout the daytime primary service area of other stations. Applications in this band are placed on Public Notice in accordance with Section 1.962 of this Chapter. Where the number of applicants requesting authority to serve an area exceeds the number of frequencies available for assignment; or where it appears that fewer applicants or licensees than the number before it should be given authority to serve a particular area; or where it appears that an applicant, either directly or indirectly, seeks to use more than 25 kHz of the available spectrum space in this band, the applications may be designated for hearing.

(8) Frequencies in this band may only be assigned to radiolocation stations which are also assigned frequencies in the 1605–1800 kHz band, provided the use of frequencies in this band is necessary for the proper functioning of the particular radiolocation system. Operations in this band are on a secondary basis to stations operating in accordance with the Commission's Table of Frequency Allocations contained in § 2.106 of this Chapter.

(9) This band is allocated to the radiolocation service on a secondary basis to other fixed or mobile services and must accept any harmful interference that may be experienced from such services or from the industrial, scientific, and medical (ISM) equipment operating in accordance with Part 18 of this Chapter.

(10) Speed measuring devices will not be authorized in this band.

(11) This frequency band is shared with and is on a secondary basis to the Maritime Radionavigation Service (Part 83) and to the Government Radiolocation Service.

(12) This frequency band is shared with and is on a secondary basis to the Government Radiolocation Service.

(13) Operations in this band are limited to survey operations using transmitters with a peak power not to exceed 5 watts into the antenna.

(14) This frequency band is shared with and is on a secondary basis to the Aeronautical Radionavigation Service (Part 87) and to the Government Radiolocation Service.

(15) The non-Government Radiolocation Service in this band is secondary to the Maritime Radionavigation Service (Part 83), the Aeronautical Radionavigation Service (Part 87) and the Government Radiolocation Service.

(16) This frequency band is shared with and is on a secondary basis to the Maritime Radionavigation Service (Part 83) and the Government Meteorological Aids Service.

(17) Operation in this frequency band is on a secondary basis to airborne Doppler radars at 8800 MHz.

(18) Radiolocation installations will be coordinated with the Government Meteorological Aids Service, and insofar as practicable, will be adjusted to meet the needs of that service.

(19) Operations in this band are on a secondary basis to the Amateur Radio Service (Part 97). Pulsed emissions are prohibited.

(20) This band is restricted to radiolocation systems using type A0 emission with a power not to exceed 40 watts into the antenna.

(21) Non-Government pulse-ranging radiolocation stations in this band are secondary to the Government Radiolocation Service, the Amateur Radio Service and the Amateur Satellite Service. Stations authorized pursuant to this footnote must cease operation on or before January 1, 1981. All power and antenna height specifications shall be made on a case-by-case basis.

(d) *Additional frequencies for automatic vehicle monitoring (AVM) systems.* The frequency bands 903–904 MHz, 904–912 MHz, 918–926 MHz, and 926–927 MHz may be assigned for AVM operations in accordance with § 90.239 except that for corporations rendering service to others under paragraph (a) (2) of this section, such operations are limited to the 904–912 MHz and 918–926 MHz bands.

(e) *Other additional frequencies available.* Radiolocation stations in this service may be authorized, on request, to use frequencies allocated exclusively to Federal Government stations, in those instances where the Commission finds, after consultation with the appropriate Government agency or agencies, that such assignment is necessary or required for coordination with Government activities.

Subpart G—Applications and Authorizations

§ 90.111 Scope.

This subpart contains the procedures and requirements for the filing of applications for authority to operate radio facilities under this part.

§ 90.113 Station authorization required.

No radio transmitter shall be operated in the services governed by this part except under and in accordance with a proper authorization granted by the Commission.

§ 90.115 Ineligibility of foreign governments.

No station authorization in the radio services governed by this part shall be granted to or held by a foreign government or its representative.

§ 90.117 Applications for radio station authorizations.

Persons desiring a radio station authorization must first submit an appropriate application. Prescribed application forms are listed in § 90.119. They may be obtained from the Washington, D.C., office of the Commission, or from any of its engineering field offices. (See § 90.145 for information regarding special temporary authorizations.)

§ 90.119 Application forms.

The following application forms shall be used—

(a) Except as provided for in paragraph (c) of this section, Form 400 shall be used to apply:

(1) For new base, fixed, or mobile station authorizations governed by this part.

(2) For modification or for modification and renewal of an existing authorization. (See § 90.135.)

(3) For the Commission's consent to the assignment of an authorization to another person or entity. In addition, the application shall be accompanied by a letter from the assignor setting forth his desire to assign all right, title, and interest in and to such authorization, stating the call sign and location of the station, and that the assignor will submit his current station authorization for cancellation upon completion of the assignment. Form 1046 may be used in lieu of this letter.

(b) Except as provided for in paragraph (c) of this section, Form 405–A shall be used to apply for a renewal without modification of a station license.

(c) Form 425 shall be used in lieu of Form 400 and 405(a) to submit applications specifying any frequency in the band 470–512 MHz.

(d) A separate application shall be submitted on FCC Form 703 whenever it is proposed to change, as by transfer of stock ownership, the control of a corporate licensee.

§ 90.121 Canadian registration.

Form 410 shall be filed by Canadian licensees desiring to operate in the United States under the terms of Article 2 and 3 of the Convention between the United States and Canada concerning Operation of Certain Radio Equipment or Stations (which entered into force May 15, 1952). This form may be obtained from the Department of Communications, Ottawa, Canada. That department should also be consulted by U.S. licensees desiring to operate in Canada.

§ 90.123 Full disclosures.

(a) Each application shall contain full and complete disclosures with regard to the real party or parties in interest and as to all matters required to be disclosed by the application forms.

(b) Each application shall be clear and complete in itself without cross reference to information previously filed. An application for modification of an existing station must show in precise detail all particulars of the desired operation, including those not affected by the modification.

§ 90.125 Who may sign applications.

(a) Except as provided in paragraph (b) of this section, applications, amendments thereto, and related statements of fact required by the Commission shall be personally signed by the applicant, if the applicant is an individual; by one of the partners, if the applicant is a partnership; by an officer, if the applicant is a corporation; or by a member who is an officer, if the applicant is an unincorporated association. Applications, amendments, and related statements of fact filed on behalf of eligible government entities, such as states and territories of the United States and political subdivisions thereof, the District of Columbia, and units of local government, including incorporated municipalities, shall be signed by such duly elected or appointed officials as may be competent to do so under the laws of the applicable jurisdiction.

(b) Applications, amendments thereto, and related statements of fact required by the Commission may be signed by the applicant's attorney in fact in case of the applicant's physical disability or of his absence from the United States. The attorney shall in that event separately set forth the reason why the application is not signed by the applicant. In addition, if any matter is stated on the basis of the attorney's belief only (rather than his knowledge), he shall separately set forth his reasons for believing that such statements are true.

(c) Only the original of applications, amendments, or related statements of fact need be signed; copies must, however, conform in all other particulars to such originals.

(d) Applications, amendments, and related statements of fact need not be signed under oath. Willful false statements made therein, however, are punishable by fine and imprisonment, U.S. Code, Title 18, Section 1001, and by appropriate administrative sanctions, including revocation of station license pursuant to Section 312(a)(1) of the Communications Act of 1934, as amended.

§ 90.127 Filing of applications.

(a) All applications for station authorizations and related correspondence shall be submitted to the Commission's Office at Washington, D.C. 20554, directed to the attention of the Secretary.

(b) Unless otherwise specified, an application should be filed at least sixty days prior to the desired date of Commission action. Applications for renewal should be filed no more than 90 days nor less than 30 days prior to the end of the license term. When timely and sufficient application for renewal of the license has been made, the license shall not expire until Commission action on the application has been completed.

§ 90.129 Supplemental information to be routinely submitted with applications.

Each application shall be accompanied by the appropriate information listed below:

(a) Evidence of frequency coordination as required by § 90.175.

(b) Description of any equipment proposed to be used if it does not appear on the Commission's current Radio Equipment List, Equipment Acceptable for Licensing, and designated for use under this part.

(c) A functional system diagram and a detailed description of the manner in which the interrelated stations will operate, if the station is part of a system involving two or more stations at different fixed locations.

(d) Agreements and statements required under § 90.179 if the stations will be cooperatively shared with others under the provisions of that section.

(e) Applicants proposing to construct a radio station in the vicinity of radio astronomy observatories in West Virginia or in the vicinity of a radio receiving zone in Colorado must submit the statements prescribed by § 90.177.

(f) Statements required in connection with developmental operation, as specified in § 90.505.

(g) The narrative statement required by Subpart I, Part 2 of this chapter concerning environmental impact, if required. See Section 1.1101–1.1319.

(h) Requests for authorization to communicate with foreign stations in accordance with § 90.19(c) or § 90.417;

(i) Showings required in connection with the use of frequencies in the band 806–866 MHz as specified in Subpart M.

(j) Any statements or showings required in connection with the use of the frequency requested.

(j) Any other statements or other data specifically required under special circumstances which are set forth in the applicable subpart of this part, by the particular form on which the application is filed or upon request by the Commission.

(k) If the applicant proposes to use a shared (community) repeater, the name of the owner of the shared repeater, (2) the names and call signs of the other licensees of that repeater, and (3) the identification (if any) assigned the repeater by the Commission.

§ 90.131 Amendment or dismissal of applications.

(a) Any application, except for mutually exclusive applications or those against which a petition to deny has been filed, may be amended as a matter of right at any time prior to the time the application is granted or designated for hearing. Each amendment to an application shall be signed and submitted in the same manner as required for the original application. The procedures for amending applications mutually exclusive under this part, applications against which a petition to deny has been filed, and applications designated for hearing are set forth in § 1.918.

(b) Any application may, upon written request signed by the applicant or his attorney, be dismissed without prejudice as a matter of right prior to the time the application is granted or designed for hearing.

§ 90.135 Modification of license.

(a) The following changes in authorized stations require an application for modification of license:

(1) Any change in frequency.

(2) Any change in the type of emission.

(3) Any increase in power beyond that authorized.

(4) Any increase in antenna height beyond that authorized.

(5) Any increase in the number of transmitters or control points beyond that authorized.

(6) Any change in the authorized location of the base or fixed transmitter or control point or the area of mobile operation.

(7) Any change in ownership, control or corporate structure.

(8) Any change in class of station.

(b) The following changes do not require an application for modification of license:

(1) Change in mailing address of licensee.

(2) Change in name only of licensee, without changes in the ownership, control, or corporate structure.

(3) Any other change not listed in Paragraph (a) of this section.

(4) In case of a change listed in Subparagraph (1) or (2) of this paragraph, the licensee shall promptly notify the Commission of such change.

The notice, which may be in letter form, shall contain the name and address of the licensee as they appear in the Commission's records, the new name or address, the call signs and classes of all radio stations authorized to the licensee under this part and the radio service in which each station is authorized. The notice shall be sent to the Secretary, Federal Communications Commission, Washington, D.C. 20554, and to the Engineer in Charge of the Radio District in which the station is located, and a copy shall be maintained with the license of each station until a new license is issued.

§ 90.137 Applications for operation at temporary locations.

(a) An application for authority to operate a base station or a fixed station at temporary locations may be submitted in accordance with the following:

(1) When one or more individual transmitters are to be operated by a licensee as a base station or as a fixed station as unspecified or temporary locations for indeterminate periods, such transmitters may be considered to comprise a single station intended to be operated at temporary locations.

(2) The application must specify the general geographic area within which the operation will be confined. The area may be specified as a city, a county or counties, a state or states or other definable geographic area.

(b) When any unit or units of a base station or fixed station which are authorized for operation at temporary locations actually remain or are intended to remain at the same location for more than one year, an application for a separate authorization specifying the fixed location shall be made as soon as possible, but not later than thirty days after the expiration of the one year period.

§ 90.139 Preliminary processing of applications.

(a) Applications received for filing are given a file number. The assignment of a file number to an application is for administrative convenience and does not indicate the acceptance of the application for filing and processing.

(b) Applications which are incomplete with respect to answers, supplementary statements, execution, or other matters of a formal character shall be deemed to be defective and may be returned to the applicant with a brief statement as to such defects. In addition, if an applicant is requested by the Commission to file any additional documents or information not included in the prescribed application form, failure to comply with such request will be deemed to render the application defective, and such application may be dismissed. Applications will also be deemed to be defective and may be returned to the applicant in the following cases:

(1) Statutory disqualification of applicant;

(2) Proposed use or purpose of station would be unlawful;

(3) Requested frequency is not allocated for assignment for the service proposed.

(c) Applications which are not in accordance with the provisions of this chapter, or other requirements of the Commission, will be considered defective and may be dismissed unless accompanied by a request in accordance with § 90.151 of this part.

§ 90.141 Resubmitted applications.

Any application which has been returned to the applicant for correction will be processed in its original position in the processing line if it is resubmitted and received by the Commission within 30 days (45 days outside continental United States) from the date on which it was returned to the applicant. Otherwise it will be treated as a new application for the purpose of processing considerations.

§ 90.143 Grants of applications.

(a) The Commission will grant an application for a station authorization

without a hearing if it is in proper form, and conforms with all rule requirements, and would serve the public interest, convenience or necessity.

(b) The Commission may grant any application in part, or add privileges, terms, or conditions not requested. When such action is taken without a hearing, the applicant may accept the authorization as granted, or may return it to the Commission along with a written request for a hearing. Any such request for hearing must be made within 30 days from the date of the grant, or from its effective date, if a later date is specified. Upon receipt of a request for hearing, the Commission will vacate the grant and designate the application for hearing in the usual manner.

§ 90.145 Special temporary authority.

(a) In circumstances requiring the temporary use of radio facilities, the Commission may issue special temporary authority for new or modified operations. A request for special temporary authority may be made in letter form signed in accordance with § 90.125 of this part. It should be submitted, in duplicate, at least 10 days prior to the date of the proposed operation. However, in cases of emergency involving danger to life or property, or due to damage to equipment, the request may be made by telephone or telegraph under the condition that a letter request is submitted within the following 10 days. All requests for special temporary authority shall be clear and complete within themselves and shall not rely on any pending application.

(b) Every request for special temporary authority should contain the following information:

(1) Name and address of the applicant;

(2) Need for special action, including a description of any emergency or damage to equipment;

(3) Type of operation to be conducted (such as field test, dispatching, etc.);

(4) Purpose of operation;

(5) Times and dates of operation;

(6) Class of station and name of radio service;

(7) Location, including geographical coordinates if known, of transmitter and/or mobile area of operations;

(8) Number of fixed transmitters and number of mobile units;

(9) Operating frequency;

(10) Output power of the transmitter;

(11) Type of emission;

(12) Description of antenna, including height above ground and power gain;

(13) Statement of eligibility for a radio service under this part.

§ 90.147 Mailing address furnished by licensee.

Each application shall set forth and each licensee shall furnish the Commission with an address in the United States to be used by the Commission in serving documents or directing correspondence to that licensee. Unless any licensee advises the Commission to the contrary, the address contained in the licensee's most recent application will be used by the Commission for this purpose.

§ 90.149 License term.

(a) Licenses for stations authorized under this part will normally be issued for a term of five years from the date of original issuance, modification, or renewal, except that, in some instances, a term of from one to five years will be applied, the term varying as may be necessary to permit the orderly scheduling of renewal applications.

(b) Authorizations for stations engaged in developmental operation under subpart P of this part will be issued upon a temporary basis for a specific period of time, but in no event to extend beyond one year from date of original issuance, modification or renewal.

§ 90.151 Requests for waiver.

Requests for waiver shall show the nature of the waiver or exception desired, and set forth the reasons in support thereof to include a showing that unique circumstances are involved and that there is no reasonable alternative solution within existing rules. Applications may be dismissed if the accompanying petition for waiver of rules does not set forth reasons which, sufficient if true, would justify a waiver or exception.

§ 90.153 Assignment of station authorization.

A station authorization and the rights it grants shall not be transferred, assigned, or in any manner disposed of to any person, unless the Commission shall, after obtaining full information, decide that the transfer, assignment, or disposal is in the public interest, convenience or necessity and give its consent in writing.

§ 90.155 Time in which station must be placed in operation.

All stations authorized under this part must be placed in operation within eight months from the date of grant or the authorization shall be invalid and must be returned to the Commission for cancellation.

§ 90.157 Discontinuance of station operation.

If a station licensed under this part discontinues operation on a permanent basis, the licensee shall forward the station license to the Commission for cancellation. A copy of the request for cancellation shall be sent to the Engineer in Charge of the district in which the station is located. For the purposes of this section, any station which has not operated for one year or more is considered to have been permanently discontinued.

Subpart H—General Policies Governing the Intersystem Assignment Coordination and Use of Frequencies

§ 90.171 Scope.

This Subpart contains detailed information concerning the policies under which the Commission assigns frequencies for the use of licensees under this part, frequency coordination procedures, and procedures under which licensees may cooperatively share radio facilities.

§ 90.173 Policies governing the assignment of frequencies.

(a) The frequencies which ordinarily may be assigned to stations in the services governed by this part are listed in Subparts B, C, D, E, and F of this part. Except as otherwise specifically provided in this part, frequencies assigned to land mobile stations are available on a shared basis only and will not be assigned for the exclusive use of any licensee.

(b) All applicants and licensees shall cooperate in the selection and use of frequencies in order to reduce interference and make the most effective use of the authorized facilities. Licensees of stations suffering or causing harmful interference are expected to cooperate and resolve this problem by mutually satisfactory arrangements. If the licensees are unable to do so, the Commission may impose restrictions including specifying the transmitter power, antenna height, or area or hours of operation of the stations concerned. Further the use of any frequency at a given geographical location may be denied when, in the judgment of the Commission, its use in that location is not in the public interest; the use of any frequency may be restricted as to specified geographical areas, maximum power, or such other operating conditions, contained in this part or in the station authorization.

(c) Frequencies allocated for Federal government radio stations under Executive Order of the President may be authorized for the use of stations in these services upon appropriate showing by the applicant that such assignment is necessary for inter-communication with government stations or required for coordination with activities of the Federal Government, and where the Commission finds, after consultation with the appropriate government agency or agencies, that such assignment is necessary.

(d) The radio facilities authorized under this part are intended for use in connection with and as an adjunct to the primary governmental or business activities of the licensee.

(e) Persons requesting authority to operate in the band 25–50 MHz should recognize that this band is shared with various services in other countries and that harmful interference may be caused by the propagation of signals in this band from distant stations. No protection from such harmful interference generally can be expected.

(f) In the 150–170 MHz band, no application will be granted which proposes a base station located less than 16 km. (10 mi.) from an existing base station on a frequency 15 kHz removed. In the Taxicab Radio Service, the minimum separation is 12 km. (7 mi.).

(g) In the states of Alaska and Hawaii, and in areas outside the continental limits of the United States and the adjacent waters, the frequencies above 150.8 MHz which are listed elsewhere in this part as available for assignment to base sta-

tions or mobile stations in the Industrial and Land Transportation Radio Services, are also available for assignment to operational fixed stations in the same service, on a secondary basis.

(h) In the Local Government, Police, and Fire Radio Services, base stations may be authorized to operate on frequencies below 450 MHz which are available to mobile stations. In the Forestry-Conservation and Highway Maintenance Radio Services, base stations may be authorized to operate on any frequencies which are available to mobile stations. Such base station operation will be on a secondary basis only, and should it result in harmful interference to mobile stations, the base stations will be required to vacate such mobile-only frequency, if the interference cannot otherwise be eliminated.

(i) In the 450–470 MHz band, the frequencies are ordinarily assigned in pairs, with the mobile station transmit frequency 5 MHz above the paired base station transmit frequency. A mobile station may be assigned the frequency which would normally be assigned to a base station for single-frequency operation. However, this single-frequency operation may be subject to interference that would not occur to a two-frequency system.

§ 90.175 Frequency coordination requirements.

Except for applications listed in paragraph (e) of this section, each application: (1) for a new frequency assignment, or (2) for a change in existing facilities by increasing the authorized power, raising the authorized antenna height, or changing the authorized station location or the location of the antenna; or (3) for the addition of a base station within the licensee's existing area of operation, shall include a showing of frequency coordination as set forth in either paragraph (a) or (b) of this section.

(a) For frequencies below 470 MHz:

(1) A report based on a field study indicating the degree of probable interference to all existing co-channel stations within 120 km. (75 mi.) of the proposed station, together with a statement that all such co-channel licensees have been notified of the applicant's intention to apply. In addition, for frequencies in the range 150–170 MHz, a report based on a field study indicating the degree of probable interference to existing stations located between 16 and 56 km. (10 and 35 mi.) (12 and 56 km. for taxicabs) from the proposed station, operating on a frequency 15 kHz removed, and a statement that the licensee of all such stations have been notified of the applicant's intention to apply. Or,

(2) A statement from a frequency coordinating committee recommended the frequency which, in the opinion of the committee, will result in the least amount of interference to all existing stations operating in the particular area. The Committee's recommendations may appropriately include comments on technical factors such as power, antenna height and gain, terrain, and other factors which may serve to mitigate any contemplated interference. If the frequency recommended is in the 150–170 MHz band, is 15 kHz removed from a frequency which is available to another radio service, and is assignable only after coordination, the committee's statement shall affirmatively show that coordination with a similar committee for the other service has been accomplished.

(b) For frequencies between 470 and 512 MHz:

(1) A report showing that the frequencies applied for are available for assignment in accordance with the applicable loading and separation standards, as specified in § 90.317 and § 90.303, or;

(2) A statement from a frequency coordinating committee recommending specific frequencies which are available for assignment in accordance with the loading standards and mileage separations applicable to the specific radio service involved.

(c) Any recommendation submited in accordance with Subparagraphs (a)(2) or (b)(2) of this section is purely advisory in character and is not binding on either the applicant or the Commission. The recommendation may not contain statements implying that anyone other than the Commission has the power to grant or deny applications. Applicants are advised not to purchase radio equipment on specific frequencies until a valid authorization has been obtained.

(d) Applications for facilities near the Canadian border north of line A or east of line C in Alaska may require coordination with the Canadian government. See Section 1.955 of this chapter.

(e) The following applications need not be accompanied by evidence of frequency coordination:

(1) Applications in the Police, Highway Maintenance, or Forestry Conservation Radio Services from States requesting frequencies available only in accordance with a geographical assignment plan.

(2) Applications in the Special Emergency Radio Service, except as required by § 90.53(b)(8).

(3) Applications for a Federal Government frequency.

(4) Applications for a frequency allocated primarily for the operation of and affording no protection from industrial, scientific, and medical (ISM) devices, (27 MHz band).

(5) Applications for a frequency in the 72–76 MHz band for operational fixed stations.

(6) Applications for a frequency in the band 216–220 MHz.

(7) Applications for a frequency below 25 MHz.

(8) Applications for a frequency above 512 MHz.

(9) Applications for a frequency allocated primarily for developmental operation.

(10) Applications in the Business Radio Service for a frequency below 450 MHz where both frequencies immediately adjacent (± 20 or 30 kHz) are available for assignment in that service, or where the frequency is available pursuant to § 90.75(d)(4).

(11) Applications in the Special Industrial Radio Service or the Business Radio Service specifying an itinerant operation only.

(12) Application in the Radiolocation Radio Service.

§ 90.177 Protection of certain radio receiving locations.

This section pertains to applications for new or modified authorizations in the vicinity of the National Radio Astronomy Observatory, Green Bank, Pocahontas County, West Virginia, the Naval Radio Research Observatory, Sugar Grove, Pendleton County, West Virginia, or the Table Mountain Radio Receiving Zone, Boulder County, Colorado.

(a) Any applicant for a new permanent base or fixed station, or for a modification of an existing authorization which would change the frequency, power, antenna height, directivity, or location within the boundaries described in paragraph (b) of this section shall notify the Director, National Radio Astronomy Observatory, P. O. 2, Green Bank, West Virginia 24944, in writing, of the technical parameters of the proposal.

(1) The notification shall be made prior to, or simultaneously with the filing of the application with the Commission.

(2) The notification shall state the geographical coordinates of the antenna, antenna height, antenna directivity, proposed frequency, type of emission and effective radiated power.

(3) After receipt of such applications, the Commission will allow a period of 20 days for comments or objections in response to the notifications indicated. If an objection to the proposed operation is received during the 20 day period from the National Radio Astronomy Observatory for itself or on behalf of the Naval Radio Research Observatory, the Commission will consider all aspects of the problem and take whatever action is deemed appropriate.

(4) The provisions of this paragraph do not apply to applications for mobile, temporary base, or temporary fixed stations.

(b) The area of concern for the National Radio Astronomy Observatory or the Naval Radio Research Observatory is the area bounded by 39°15′ N. on the north, 78°30′ W. on the east, 37 30′ N. on the south, and 80°30′ W. on the west.

(c) Protection for Table Mountain Radio Receiving Zone, Boulder County, Colorado. Applicants for a station authorization to operate in the vicinity of Boulder County, Colorado, under this part are advised to give due consideration, prior to filing applications, to the need to protect the Table Mountain Radio Receiving Zone from harmful interference. These are the Research Laboratories of the Department of Com-

merce, Boulder County, Colorado. To prevent degradation of the present ambient radio signal level at the site, the Department of Commerce seeks to ensure that field strengths at 40°07'50" N. Latitude, 105°14'40" W. Longitude, resulting from new assignments (other than mobile stations) or from modification or relocation of existing facilities do not exceed the following values:

Frequency range	Field strength (millivolt per meter) in authorized bandwidth of service	Power flux density [1] (decibel watt per square meter) in authorized bandwidth of service
Below 540 kHz	10	−65.8
540 to 1600 kHz	20	−59.8
1.6 to 470 MHz	10	−65.8
470 to 890 MHz	30	−56.2
Above 890 MHz	1	−85.8

[1] Equivalent values of power flux density are calculated assuming a free space characteristic impedance of 376.7≅120 π ohms.

(1) Advance consultation is recommended particularly for those applicants who have no reliable data indicating whether the field strength or power flux density figures in the above table would be exceeded by their proposed radio facilities. In such instance, the following is a suggested guide for determining whether coordination is appropriate:

(i) All stations within 2.4 km. (1.5 statute miles.)

(ii) Stations within 4.8 km. (3 statute miles) with 50 watts or more effective radiated power (ERP) in the primary plane of polarization in the azimuthal direction of the Table Mountain Radio Receiving Zone;

(iii) Stations within 16 km. (10 statute miles) with 1 kW or more ERP in the primary plane of polarization in the azimuthal direction of Table Mountain Receiving Zone;

(iv) Stations within 80 km. (50 statute miles) with 25 kW or more ERP in the primary plane of polariaztion in the azimuthal direction of Table Mountain Receiving Zone.

(2) Applicants concerned are urged to communicate with the Radio Frequency Management Coordinator, Department of Commerce, NOAA/OT/NBS, Time and Frequency Division, Boulder Laboratories, Boulder, Colorado 80302; in advance of filing their applications with the Commission.

(3) The Commission will not screen applications to determine whether advance consultation has taken place. However, applicants are advised that such consultation can avoid objections from the Department of Commerce or proceedings to modify any authorization which, in fact, permits a signal at the reference point in excess of the field strength specified herein.

§ 90.179 Cooperative use of radio stations.

This section will be composed in accordance with the decision in Docket 18921, now pending.

Subpart I—General Technical Standards

§ 90.201 Scope.

This subpart sets forth the general technical requirements for use of frequencies and equipment in the radio services governed by this part. Such requirements include standards for acceptability of equipment, frequency tolerance, modulation, emissions, power, and bandwidths. Special additional technical standards applicable to certain frequency bands and certain specialized uses are set forth in Subparts J. K, M, and N.

§ 90.203 Type acceptance required.

(a) Except as specified in paragraph (b) of this section, each transmitter utilized for operation under this part and each transmitter marketed as set forth in Section 2.803 (of Part 2) must be of a type which is included in the Commission's current Radio Equipment List as type accepted or type approved for use under this part; or, be of a type which has been type accepted or type approved by the Commission for use under this part in accordance with the procedures in subparagraph (2) of this paragraph.

(1) The Commission periodically publishes a list of equipment entitled "Radio Equipment List, Equipment Acceptable for Licensing." Copies of this list are available for public reference at the Commission's offices in Washington, D.C., and at each of its field offices. This list includes type accepted and type approved equipment and, also, until such time as it may be removed by Commission action, other equipment which appeared in this list on May 16, 1955.

(2) Any manufacturer of radio transmitting equipment (including signal boosters) to be used in these services may request type acceptance or type approval for such equipment following the procedures set forth in Subpart J of Part 2 of this chapter. Type acceptance or type approval for an individual transmitter or signal booster also may be requested by an applicant for a station authorization by following the procedures set forth in Part 2 of this chapter. Such equipment if approved or accepted will not normally be included in the Commission's "Radio Equipment List" but will be individually enumerated on the station authorization.

(b) Type acceptance is not required for the following:

(1) Transmitters used in developmental operations in accordance with Subpart P.

(2) Transmitters used for police zone and interzone stations authorized as of January 1, 1965.

(3) Transmitting equipment used in the band 1427–1435 MHz.

(4) Transmitters used in radiolocation stations in accordance with Subpart F authorized prior to January 1, 1974, for Public Safety and Land Transportation applications (Old Parts 89 and 93).

(5) Transmitters used in radiolocation stations in accordance with Subpart F authorized for industrial applications (Old Part 91).

(c) Radiolocation transmitters for use in Public Safety and Land Transportation applications marketed prior to January 1, 1974, must meet the applicable technical standards in this part, pursuant to Section 2.805 of this chapter.

(d) Radiolocation transmitters for use in Public Safety and Land Transportation applications marketed after January 1, 1974, must comply with the requirements of paragraph (a) of this section.

§ 90.205 Power.

(a) The power which may be used by a station in these services shall be no more than the minimum required for satisfactory technical operation commensurate with the size of the area to be served and local conditions which affect radio transmission and reception. In cases of harmful interference, the Commission may order a change in power or antenna height or both. Applications for authorizations must specify no more power than the actual power necessary for satisfactory operation.

(b) Except where otherwise specifically provided, the maximum power that will be authorized is as follows:

Frequency range (megahertz)	Maximum output power	Maximum effective radiated power (watts)
1.3 to 3	[1] 1500	
3 to 25	[1] [2] 750	
25 to 100	300	
100 to 216	[3] 350	
216 to 220	[3] [4]	[4]
220 to 470	[3] [5] 350	
470 to 512		1000
806 to 821	[6]	[6]
851 to 866	[7]	[6]
1427 to 1435	[8]	
2450 to 2500	[5]	
2500 to 10,550	[4]	[4]
10,550 to 10,680	[3]	
Above 10,680	[4]	[4]

[1] For single sideband operations (A3J emission) below 10 MHz, the authorized power shall be stated in terms of peak envelope power, which is the average power supplied to the antenna transmission line by a transmitter during 1 radio frequency cycle at the highest crest of the modulation envelope taken under conditions of the modulation envelope taken under conditions of normal operation. The maximum peak envelope power permitted is 2 kW.

[2] In the frequency band 3 to 6 MHz, stations in the industrial services and the radiolocation radio service may be authorized up to 1500 W.

[3] Except as noted in footnote 5 the maximum output power in the motor carrier, taxicab, railroad, and auto emergency radio services is 75 W.

[4] To be specified in the authorization.

[5] In the frequency band 450 to 470 MHz, stations in the land transportation radio services are limited to 75 W, however, they may be authorized up to 350 W for developmental operations in accordance with subpt. P.

[6] Specified in subpt. M.

[7] The output power of a transmitter on any authorized frequency in this band shall not exceed 2000 W.

(c) The output power shall not exceed by more than 20 percent either the output power shown in the Radio Equipment List (available in accordance with Section 90.203(a)(1)) for transmitters included in this list or when not so listed, the manufacturer's rated output power for the particular transmitter specifically listed on the authorization.

§ 90.207 Types of emissions.

Normally operations authorized in the services governed by this part are intended to provide voice communications between stations. Accordingly, except as otherwise provided for in the following paragraphs, stations in these services will be authorized to use only A3 or F3 emission.

(a) Authorizations to use A3 or F3 emission also include the use of emissions for tone signals or signalling devices whose sole functions are to establish and to maintain communications and for operations in the Public Safety and Special Emergency Radio Services, to activate emergency warning devices used solely for the purpose of advising the general public or emergency personnel of an impending emergency situation.

(b) The use of F3 emission in these services will be authorized only on frequencies above 25 MHz.

(c) Only A3J emission will be authorized for telephony systems on frequencies below 25 MHz.

(d) For tone paging operations only A1, A2, F1, or F2 emission will be authorized.

(e) For radioteleprinter operations that may be authorized in accordance with § 90.237, only F2 or F9 emission will be authorized.

(f) For radiofacsimile operations that may be authorized in accordance with § 90.237, only F4 emission will be authorized.

(g) For AVM systems that may be authorized in accordance with § 90.239, only F1, F2, F3, F9, or P9 emission will be authorized.

(h) For telemetry operations only A1, A2, F1, F2, or F9 emission will be authorized.

(i) For call box operations that may be authorized in accordance with § 90.241, only A1, A2, F1, F2, or F3 emissions will be authorized.

(j) For radiolocation operations as may be authorized in accordance with Subpart F, unless otherwise provided for any type of emission may be authorized upon a satisfactory showing of need.

§ 90.209 Bandwidth limitations.

(a) Each authorization issued to a station licensed under this part will specify the maximum authorized bandwidth to be occupied by the emission. The bandwidth in kilohertz will appear as a prefix to the emission classification. The specified band will contain those frequencies upon which 99 percent of the radiated power appears, extended to include any discrete frequency upon which the power is at least 0.25 percent of the total radiated power.

(b) The maximum authorized bandwidth of emission corresponding to the type of emission specified in § 90.207 of this part and the maximum authorized frequency deviation in the case of frequency or phase modulated emission shall be as follows:

(1) For all type A1 emission, the maximum authorized bandwidth shall be 0.25 kHz.

(2) Except as noted in subparagraph 3, the maximum authorized bandwidth for type A3 emission shall be 8 kHz.

(3) For type A3J operations below 10 MHz, the bandwidth occupied by the emission shall not exceed 3500 Hz. The frequency coinciding with the center of the authorized frequency band of emission shall be the assigned frequency. Both the authorized carrier frequency and assigned frequency shall be specified in the authorization. The authorized carrier frequency shall be 1400 Hz lower in frequency than the assigned frequency. Only upper sideband emission shall be used. In the case of regularly available double sideband radiotelephone channels, and assigned frequency for A3J emission is available either 1.6 kHz below or 1.4 kHz above the double sideband radiotelephone assigned frequency.

(4) For all F3 emission, on frequencies below 947 MHz, the maximum authorized bandwidth shall be 20 kHz and the maximum authorized frequency deviation shall be 5 kHz. However, stations authorized for operation on or before December 1, 1961, in the frequency band 73.0–74.6 MHz may continue to operate with a bandwidth of 40 kHz and a deviation of 15 kHz. For stations operating on frequencies above 947 MHz, except as provided in subparagraph (5), of this section the maximum authorized bandwidth and frequency deviation will be specified in the station authorization.

(5) The maximum authorized bandwidth shall be 25 MHz in the frequency band 10,550–10,680 MHz and 50 MHz in the frequency bands above 16,000 MHz.

(6) For all other types of emissions the maximum authorized bandwidth shall not be more than that normally authorized for voice operations.

(c) Except as noted in paragraph (d), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

(1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: at least 25 decibels;

(2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: at least 35 decibels;

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: at least 43 plus 10 Log $_{10}$ (mean output power in watts) decibels or 80 decibels, whichever is the lesser attenuation.

(d) For single sideband operations (A3J) below 10 MHz, the carrier frequency power shall be at least 40 dB below the peak envelope power and the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

(1) On any frequency removed from the assigned frequency by more than 1.75 kHz up to and including 5.25 kHz: At least 25 dB;

(2) On any frequency removed from the assigned frequency by more than 5.25 kHz and up to and including 8.75 kHz: At least 35 dB;

(3) On any frequency removed from the assigned frequency by more than 8.75 kHz: At least 43 plus 10 log $_{10}$ (mean output power in watts) dB.

(e) When radiation in excess of that specified in paragraphs (c) and (d) of this section results in harmful interference, the Commission may require appropriate technical changes in equipment to alleviate the interference.

§ 90.211 Modulation requirements.

(a) For those transmitters subject to the provisions of paragraph (d) of this section, the maximum audio frequency required for satisfactory radiotelephony intelligibility in the radio services governed by this part is considered to be 3000 Hertz. (2800 Hz for single sideband operations below 25 MHz) For all others, the overall frequency response of the audio and modulating circuits may correspond approximately with that required for satisfactory intelligibility.

(b) When amplitude modulation is used for radiotelephony, the modulation percentage shall be sufficient to provide efficient communication and normally should be maintained above 70 percent on peaks, but shall not exceed 100 percent on negative peaks.

(c) Each transmitter shall be equipped with a device which automatically prevents modulation in excess of that specified in this subpart which may be caused by greater than normal audio level. This requirement shall not be applicable to transmitters authorized to operate as mobile stations with a maximum output power of 2 watts or less.

(d) Each transmitter in the frequency ranges 25 to 50, 72.0 to 73.0, 75.4 to 76, 150.8 to 174, 450 to 512, 806 to 821, and 851 to 866 MHz which is equipped with a modulation limiter in accordance with paragraph (c) of this section shall be equipped with an audio low-pass filter. Such filter shall be installed between the modulation limiter and the modulated stage and shall meet the specifications contained in paragraph (e) or (f) of this section. The provisions of this paragraph do not apply to transmitters of licensed radio-communications systems operating wholly within the limits of one or more of the territories or possessions of the United States or Alaska, or Hawaii, except those systems operating in the frequency ranges 806 to 821 MHz and 851 to 866 MHz.

(e) Except as provided in paragraph (f) of this section, at audio frequencies between 3 kHz and 15 kHz, the low-pass filter required by the provisions of paragraph (d) of this section shall have an attenuation greater than the attenuation at 1 kHz by at least

$$40 \log_{10} (f/3) \text{ decibels.}$$

where "f" is the audio frequency in kHz. At audio frequencies above 15 kHz, the attenuation shall be at least 28 decibels greater than the attenuation at 1 kHz.

(f) For stations authorized in the 450–470 MHz band on or after November 1, 1967, and for all stations authorized in the 470–512, 806–821, and 851–866 MHz bands, at audio frequencies between 3 kHz and 20 kHz, the low-pass filter required by the provisions of paragraph (d) of this section shall have an attenuation greater than the attenuation at 1 kHz by at least:

60 $\log_{10}$ (f/3) decibels.

where "f" is the audio frequency in kHz. At audio frequencies above 20 kHz, the attenuation shall be at least 50 decibels greater than the attenuation at 1 kHz.

§ 90.213 Frequency tolerance.

(a) A licensee in the services governed by this part shall maintain the carrier frequency of each authorized transmitter within the following percentage of the assigned frequency:

Frequency range	Fixed and base stations		Mobile stations	
	Over 200 W	200 W or less	Over 2 W	2 W or less
	Percent	*Percent*	*Percent*	*Percent*
Megahertz:				
Below 25 [1]	[2] [3] 0.01	0.01	0.01	0.02
25 to 50	.002	.002	.002	.005
50 to 450	[4] .0005	.0005	.0005	.005
450 to 470	[5] [6] .00025	[5] [6] .00025	.0005	[7] .0005
470 to 512	[8] .00025	[8] .00025	.0005	.0005
806 to 821	[7] .00015	[7] .00015	.00025	.00025
851 to 866	.00015	.00015	.00025	.00025
1427 to 1435	[9] .03	[9] .03	.05	.08
2450 to 2500		[10]		[10]
2500 to 10,550		[10]		[10]
10,550 to 10,680		[10]		[10]
Above 10,680		[10]		[10]

[1] For single sideband radiotelephony operations below 10 MHz, the carrier frequency shall be maintained within 50 Hz of the authorized carrier frequency.
[2] Radiolocation stations operating in frequency bands above 130 kHz must operate with a frequency tolerance of 0.005 pct.
[3] Stations in the petroleum radio service used in geographical operations and employing nonvoice techniques must operate with a frequency tolerance of 0.005 pct.
[4] Stations authorized for operation on or before Dec. 1, 1961, in the frequency band 73.0–74.6 MHz may operate with a frequency tolerence of 0.005 pct.
[5] Operational fixed stations controlling mobile relay stations, (through use of the associated mobile frequency) may operate with a frequency tolerence of 0.0005 pct.
[6] A frequency tolerance of 0.0005 pct is permitted in the railroad radio service for base stations operating on 452.925, 452.950, 457.925, or 457.950 MHz and used for remote control purposes in railroad yard and terminal areas.
[7] For control stations, the frequency tolerence is 0.00025 pct.
[8] For fixed stations with a power above 200 W, the frequency tolerence is 0.01 pct if the necessary bandwidth of the emission does not exceed 3 kHz .For fixed station transmitters with a power at 120 W or less and using time division multiplex the frequency tolerence may be increased to 0.05 pct.
[9] To be specified in the station authorization.
[10] Radiolocation equipment using pulse modulation shall meet the following frequency tolerance: The frequency at which maximum emission occurs shall be within the authorized frequency band and shall not be closer than 1.5/T MHz to the upper and lower limits of the authorized frequency band where T is the pulse duration in microseconds.

(b) For the purpose of determining the frequency tolerance applicable to a particular transmitter in accordance with the foregoing provisions of this section, the power of a transmitter shall be the maximum rated output power as specified by the manufacturer.

§ 90.215 Transmitter measurements.

(a) The licensee of each station shall employ a suitable procedure to determine that the carrier frequency of each transmitter authorized to operate with an output power in excess of two watts is maintained within the tolerance prescribed in Section 91.213. This determination shall be made, and the results entered in the station records in accordance with the following:

(1) When the transmitter is initially installed;

(2) When any change is made in the transmitter which may affect the carrier frequency or its stability;

(b) The licensee of each station shall employ a suitable procedure to determine that the transmitter output power of each transmitter authorized to operate with an output power in excess of two watts does not exceed the maximum figure specified on the current station authorization. On authorizations stating only the input power to the final radio frequency stage, the maximum permissible output power is 75 percent for frequencies below 25 MHz and 60 percent of the input power for frequencies above 25 MHz. If a non-DC final radio frequency stage is utilized, then the output power shall not exceed 75 percent of the input power. This determination shall be made, and the results thereof entered into the station records, in accordance with the following:

(1) When the transmitter is initially installed;

(2) When any change is made in the transmitter which may increase the transmitter power input;

(c) The licensee of each station shall employ a suitable procedure to determine that the modulation of each transmitter, which is authorized to operate with an output power in excess of two watts, does not exceed the limits specified in this part. This determination shall be made and the following results entered in the station records, in accordance with the following:

(1) When the transmitter is initially installed;

(2) When any change is made in the transmitter which may affect the modulation characteristics.

(d) The determinations required by paragraphs (a), (b), and (c) of this section may, at the opinion of the licensee, be made by a qualified engineering measurement service, in which case the required record entries shall show the name and address of the engineering measurement service as well as the name of the person making the measurements.

(e) In the case of mobile transmitters, the determinations required by paragraphs (a) and (c) of this section may be made at a test or service bench: Provided, That the measurements are made under load conditions equivalent to actual operating conditions; and provided further, that after installation in the mobile unit the transmitter is given a routine check to determine that it is capable of being received satisfactorily by an appropriate receiver.

§ 90.217 Exemption from technical standards.

Transmitters used at stations licensed in the Business Radio Service which have an output power not exceeding 120 milliwatts are exempt from the technical requirements set out in this subpart: Provided, however, that the sum of the bandwidth occupied by the emitted signal plus the bandwith required for frequency tolerance shall be so adjusted that any emission appearing on a frequency 40 kHz or more removed from the assigned frequency is attenuated at least 30 dB below the unmodulated carrier. Such transmitters may operate in the continuous carrier transmit mode.

Subpart J—Non-Voice and Other Specialized Operations

§ 90.231 Scope.

This subpart sets forth requirements and standards for licensing and operation of non-voice and other specialized radio uses (other than radiolocation). Such uses include secondary signalling, radioteleprinter, radiofacsimile, automatic vehicle monitoring (AVM), radio call box, relay, vehicular repeater, and control station operations.

§ 90.233 Secondary base/mobile non-voice signalling operations.

On a secondary basis to voice operations, the use of A2, A9, F2, or F9 emission may be authorized to base/mobile operations in accordance with the following limitations and requirements:

(a) Authorizations are limited to mobile service frequencies below 950 MHz.

(b) Maximum duration of a transmission for each distinct non-voice message, including automatic repeats of the message, may not exceed two seconds. There must be a break in the carrier between each such transmission.

(c) Required station identification for non-voice operations must be made by F3 or A3 emission and may be given by the base station for a base/mobile system.

(d) Secondary non-voice operations under this section may not be authorized for tone paging, telemetry, radiolocation, AVM, radioteleprinter, radiofacsimile, or radio call box operations. These operations are authorized under other sections of this part.

§ 90.235 Secondary fixed tone signalling and alarm operations.

In the Local Government, Police, Fire, Highway Maintenance, Forestry Conservation, Power, and Petroleum Radio Services, fixed operations may be authorized for tone or impulse signalling on mobile service frequencies above 25 MHz within the area normally covered by the licensee's mobile system on a secondary basis to the primary mobile service operation of any other license for the purposes described in paragraphs (a) and (b):

(a) In the Public Safety Radio Services, the only purposes for which such secondary signalling may be used are:

(1) Indication of equipment malfunction.

(2) Actuation of a device to indicate the presence of an intruder, fire, or other hazardous condition on the property under the protection of the licensee.

(3) Indication of an abnormal condition in facilities under the jurisdiction of the licensee that, if not promptly reported, would result in danger to human life.

(4) Transmissions that may be necessary to verify status of equipment; adjust operating conditions; correct any abnormal condition; or to activate devices that alert the public to a condition affecting the imminent safety of life or property.

(5) Confirmation of status, when an operation or correction has been accomplished, or when an alerting device has been activated.

(b) In the Power and Petroleum Radio Services, the only purposes for which such secondary signalling may be used are:

(1) Indication of failure of equipment or service used in the facilities of the licensee.

(2) Indication of an abnormal condition in the production, transmission, collection, distribution, refining, or transporting facilities of the licensee, which if not promptly corrected would result in failure of the equipment affected.

(3) Transmission from the point where alarms or other operational data are received as may be necessary to verify status of equipment or processes; verify or adjust operating conditions; restore lost service; place standby equipment in operation; or to correct any abnormal conditions which would otherwise result in the immediate or continued failure in the licensee's operations.

(4) Confirmation of status or operating conditions, or that an operation or correction intended to be accomplished in subparagraph (3) of this paragraph has occurred.

(c) All such secondary signalling shall be subject to the following technical requirements:

(1) The bandwidth shall not exceed that authorized to the licensee for the primary operations on the frequency concerned.

(2) The output power shall not exceed 30 watts (at the remote site).

(3) A1, A2, A9, F1, F2, and F9 emission may be authorized. In the Police Radio Service A3 or F3 emission may also be authorized.

(4) For systems authorized in the Public Safety Services after June 30, 1975, to be used for the purposes outlined in paragraph (a) of this section, the maximum duration of any one non-voice signal may not exceed two seconds and shall not be transmitted more than three times. The maximum duration of any one voice alarm shall not exceed six seconds and shall not be transmitted more than three times. For systems authorized prior to this date, any one alarm or warning may be transmitted a maximum of five times and each transmission shall not exceed six seconds; such system to include existing facilities and additional facilities which may be authorized as a clear and direct expansion of the existing system.

(5) For systems authorized in the Petroleum Radio Service after June 1, 1976, each transmission for any one alarm, warning, corrective action, or requirement, positive confirmation, checkback, or other purpose set forth in paragraph (b) of this section, shall be limited to a maximum duration of two seconds and shall not be repeated more than three times. For systems authorized prior to June 1, 1976, any one alarm or warning may be transmitted a maximum of five times and each transmission may not exceed six seconds.

(6) For systems authorized in the Power Radio Service after June 1, 1976, each transmission for any one alarm, warning corrective action, or requirement, positive confirmation, check-back, or other purpose set forth in paragraph (b) of this section, shall be limited to a maximum duration of two seconds and shall not be repeated more than five times. For systems authorized prior to June 1, 1976, any one alarm or warning may be transmitted a maximum of five times and each transmission may not exceed six seconds.

(7) Systems employing automatic interrogation shall be limited to non-voice techniques and shall not be activated for this purpose more than ten seconds out of any 60 second period. This ten second time frame includes both transmit and response times.

(8) Frequency loading resulting from the use of secondary signalling will not be considered in whole or in part as a justification for authorizing additional frequencies in the licensee's mobile system.

(9) A mobile service frequency may not be used exclusively for secondary signalling.

(10) Automatic means shall be provided to deactivate the transmitter in the event the carrier remains on for a period in excess of three minutes.

(11) Operational fixed stations authorized pursuant to the provisions of this paragraph are exempt from the requirements of Sections 90.137(b), 90.425, and 90.429.

(12) Base, mobile relay, or mobile stations may transmit secondary tone or impulse signals to receivers at fixed locations subject to the conditions, and for the purposes set forth in this section.

§ 90.237 Interim provisions for operations of radioteleprinter and radiofacsimile devices.

These provisions authorize and govern the use of radioteleprinter and radiofacsimile devices for base station use (other than on mobile-only or paging-only frequencies) in the radio services (except inthe Radiolocation and Special Emergency Radio Services) in this part. In the Business Radio Service the authority extends only to those frequencies subject to the coordination requirements set forth in 90.175.

(a) Information must be submitted with an application to establish that the minimum separation between a proposed radioteleprinter or radiofacsimile base station and the nearest co-channel base station of another licensee operating a voice system is 120 km. (75 mi.) for a single frequency mode of operation, or 56 km. (35 mi.) for a two frequency mode of operation. Where this minimum mileage separation cannot be achieved, either agreement to the use of F2, F4, or F9 emission must be received from all existing co-channel licensees using voice emission within the applicable mileage limits, or if agreement was not received, the licensee of the radioteleprinter or radiofacsimile system is responsible for eliminating any interference with preexisting voice operations. New licensees of voice operations. New licensees of voice operations will be expected to share equally any frequency occupied by established radioteleprinter or radiofacsimile operations.

(b) The application must list the manufacturer and model number of the radioteleprinter or radiofacsimile system to be employed, or contain a detailed technical description of the system.

(c) Transmitters type-accepted under this part for use of F3 emission may also be used for F2, F4, or F9 emission for radioteleprinter or radiofacsimile, provided the keying signal is passed through the low pass audio frequency filter required for F3 emission. The transmitter must be so adjusted and operated that the instantaneous frequency deviation does not exceed the maximum value allowed for F3.

(d) Frequencies will not be assigned exclusively for F2, F4, or F9 emission for radioteleprinter or radiofacsimile (except where specifically provided for in the frequency limitations).

(e) The requirements in this part applicable to the use of F3 emission are also applicable to the use of F2, F4, or F9 emission for radioteleprinter and radiofacsimile transmissions.

(f) The station identification required by § 90.425 must be given by voice.

§ 90.239 Interim provisions for operation of automatic vehicle monitoring (AVM) systems.

(a) These provisions authorize, to persons eligible in the radio services of this part, the licensing of Automatic Vehicle Monitoring (AVM) systems that utilize non-voice radio techniques to determine the location of vehicles. Authority is also provided for the transmission of

voice and/or non-voice messages relating to vehicles being located.

(b) The use of F1, F2, F3, F9, or P9 emissions is authorized for operaiton of transmitters in AVM systems subject to paragraph (e) (2) (iii) of this section.

(c) Frequencies for AVM operations are assignable as follows:

(1) Licensees for pulse-ranging AVM systems, requiring 8 MHz bandwidth may be authorized in the 904-912 MHz or 918-926 MHz band provided that:

(i) A licensee will not be assigned a second frequency band in the same geographic area until showing is made that the frequency band already assigned is being used to provide location data for not less than 5,000 vehicles.

(ii) Operations will not cause interference to government stations which operate in these bands and can tolerate interference from industrial, scientific, and medical (ISM) devices and from government stations which operate in these bands.

(2) AVM systems requiring bandwidths not exceeding 1 MHz may be authorized in the 903-904 or 926-927 MHz bands on a developmental basis in accordance with subpart P.

(3) Applicants requiring not more than 25 kHz bandwidth per frequency in the 25–50 MHz, 150–170 MHz and 450–512 MHz bands may either utilize base-mobile frequencies presently assigned the applicant, or be asisgned base-mobile frequencies available in the service in which eligibility has been established, provided that:

(i) For transmission between vehicles and base stations, each frequency in a single-frequently mode of operation will provide location data for approximately 200 vehicles, or both frequencies in a two-frequency mode of operaiton will provide location data for approximately 400 vehicles, except that for frequencies in the 450–512 MHz band that are assigned in pairs in accordance with the allocation plan for the band, the requirement is that location data be provided for approximately 200 vehicles for each frequency pair; and a showing is made that 50 percent of the vehicles will be in operation within the system by the end of the second year of the initial license term, and 70 percent will be in operation within the system by the end of the initial license term; except that if these vehicle loading standards will not be met, frequencies will be assigned only on a secondary non-interference basis to any authorized radiotelephony operation.

(ii) The minimum separation between a proposed AVM station and the nearest co-channel base station of another licensee operating a voice system is 75 miles (120 km) for a single frequency mode of operation or 35 miles (56 km) for a two-frequency mode of operation. Where the minimum mileage separation cannot be achieved, agreement to the use of F1, F2, F9, or P9 emission must be received from all existing co-channel licensees using voice emissions within the applicable mileage limits. If there is interference with voice operations and required agreement was not received, or operation was authorized on a secondary non-interference basis, the licensee of the AVM system is responsible for eliminating the interference.

(iii) Frequencies additional to any assigned under subparagraph (i) of this paragraph will not be assigned to the same licensee in the same geographic area until each of such licensee's frequencies for AVM operation is shown to accommodate not less than 90 percent of the frequency loading requirements specified in subparagraph (i) of this paragraph.

(d) Each application to license an AVM system shall include the following supplemental information:

(1) A detailed description of the manner in which the system will operate, including a map or diagram.

(2) For wide band frequency operation, the necessary or occupied bandwidth of emission whichever is greater.

(3) The data transmission characteristics as follows:

(i) The vehicle location update rates;

(ii) Specific transmitter modulation techniques used;

(iii) For codes and timing scheme: A table of bit sequences and their alphanumeric or indicator equivalents, and a statement of bit rise time, bit transmission rates, bit duration, and interval between bits;

(iv) A statement of amplitude-versus-time of the interrogation and reply formats, and an example of a typical message transmission and any synchronizing pulsts utilized.

(4) A plan to show implementation schedule during the initial license term.

(e) Technical standards.

(1) AVM stations authorized for operation below 512 MHz must comply with the technical standards applicable to the frequency band prescribed in this chapter, including the requirement for type acceptance of equipment used.

(2) Pending final development of technical standards, utilization of non-type accepted transmitters by stations authorized for operation above 512 MHz will be permissible provided that:

(i) The output power of transmitters used in pulse ranging systems shall not exceed 1 kW PEP;

(ii) The output power of transmitters used in non-pulse ranging systems shall not exceed 300 watts.

(iii) Emissions will be authorized on a case-by-case basis dependent on the requirements of the specific technique utilized.

(3) Transmitters to be operated at signposts, or from vehicles to signposts for location signalling purposes may be employed with output power not to exceed 250 milliwatts, and their operation is secondary to regular co-channel operations on the frequency being utilized.

(4) Pending development of further specific technical standards for AVM systems, the Commission, on a case-by-case basis, may impose additional appropriate technical requirements to assure efficient and effective frequency utilization.

(f) VM stations are exempted from the identification requirements of § 90.425; however, the Commission may impose automatic station identification requirements when determined to be necessary for monitoring and enforcement purposes.

§ 90.241 Radio call box operations.

(a) The frequencies in the 72–76 MHz band listed in § 90.17(b) may be assigned in the Local Government Radio Service for operation of radio call boxes to be used by the public to request fire, police, ambulance, road service, and other emergency assistance, subject to the following conditions and limitations:

(1) Maximum transmitter power will be either 2.5 watts plate input to the final stage or 1 watt output.

(2) Antenna gain shall not exceed zero dBd (referred to a half-wave dipole) in any horizontal direction.

(3) Only vertical polarization of antennas shall be permitted.

(4) The antenna and its supporting structure must not exceed 20 feet (6.1 meters) in height above the ground.

(5) Only A1, A2, F1, or F2 emission shall be authorized.

(6) The transmitter frequency tolerance shall be 0.005 percent.

(7) Except for test purposes, each transmission must be limited to a maximum of two seconds and shall not be automatically repeated more than two times at spaced intervals within the following 30 seconds. Thereafter, the authorized cycle may not be reactivated for one minute.

(8) All transmitters installed after December 10, 1970, shall be furnished with an automatic means to deactivate the transmitter in the event the carrier remains on for a period in excess of three minutes. The automatic cutoff system must be designed so the transmitter can be only manually reactivated.

(9) Frequency selection must be made with regard to reception of television stations on channels 4 (66–72 MHz) and 5 (76–82 MHz) and should maintain the greatest possible frequency separation from either or both of these channels, if they are assigned in the area.

(b) Frequencies in the band 154.4525 to 154.460 MHz may be assigned to fixed stations in the Local Government Radio Service for the purpose of providing emergency call box service. The maximum power output of the transmitter is 20 watts. A1, A2, F1, or F2 emission may be authorized. The authorized bandwith may not exceed 6 kHz. For FM transmitters, the sum of the highest modulating frequency in hertz and the amount of frequency deviation or swing in hertz may not exceed 2800 Hz and the maximum frequency deviation may not exceed 2.5 kHz. For AM transmitters the highest modulating frequency may not exceed 2000 Hz. The carrier frequency must be maintained with 0.0005 percent of the center of the frequency band.

(c) Frequencies in the 450–470 MHz band which are designated as available

for assignment to central control stations and radio call box installations in § 90.17(b) or § 90.17(c)(11) may be assigned in the Local Government Radio Service for highway call box systems subject to the following requirements:

(1) Call box transmitters shall be installed only on limited access highways and may communicate only with central control stations of the licensee.

(2) Maximum transmitter power for call boxes will be either 2.5 watts input to the final amplifier stage or one watt output. The central control station shall not exceed 25 watts effective radiated power (ERP).

(3) The height of a call box antenna may not exceed 7 meters (20 feet) above the ground, the natural formation, or the existing man-made structure (other than an antenna supporting structure) on which it is mounted. A central station transmitting antenna, together with its supporting structure shall not exceed 15 m. (50 ft.) above the ground surface.

(4) Only F1, F2, F3, or F9 emission may be authorized for non-voice signalling, radiotelephony, and multiplexed voice and non-voice use. The provisions in this part applicable to the use of F3 emission are also applicable to the use of F1, F2, or F9 emission for call box transmitters.

(5) The station identification required by § 90.425 shall be by voice and may be transmitted for the system from the central control station. Means shall be provided at each central control station location to automatically indicate the call box unit identifier when a call box unit is activated.

(6) Call box installations must be so designed that their unit identifier is automatically transmitted when the handset is lifted.

(7) Each application for a call box system must include a description of the non-voice transmitting equipment. This description shall specify the character structure, bit rate, modulating tone frequencies, identification codes, and the method of modulation (i.e., frequency shift, tone shift, or tone phase shift).

(8) Call box installations may be used secondarily for the transmission of information from roadside sensors. Central control station transmitters may be used secondarily to interrogate call box roadside sensors and for the transmission of signals to activate roadside signs.

(9) Each call box transmitter must be provided with a timer which will automatically deactivate the transmitter after 2 minutes unless the central control station operator reactivates the timer cycle.

(10) The central control station must include facilities that permit direct control of any call box in the system.

(11) Call box transmitter frequency tolerance shall be 0.001 percent.

(12) Transmitters type-accepted under this part for use of F3 emission may be used for F1, F2, or F9 emission provided that the audio tones or digital data bits are passed through the low pass audio filter required to be provided in the transmitter for F3 emission. The transmitter must be adjusted and operated so that the instantaneous frequency deviation does not exceed the maximum value allowed for F3 emission.

(d) In addition to the frequencies available pursuant to § 90.17(b) the frequencies set forth in § 90.17(c)(11) may be used for central control station and call box installations in areas where such frequencies are available for fixed system use subject to the requirements and limitations of that section and subject to the provisions of subdivisions (1), (4), (5), (6), (7), (8), (9), (10), and (12) of paragraph (c) of this section.

(e) In accordance with subpart P of this Part, the frequencies available pursuant to § 90.17(b) and § 90.17(c)(11) for central control station and call box installations may be assigned for developmental operation as part of a highway safety communication program which is designed to provide radio communications directly with motorists to and from their motor vehicles.

§ 90.213 Mobile relay stations.

(a) Mobile relay stations under this part may be authorized only as follows:

(1) On frequencies below 450 MHz, mobile relay stations may be authorized to operate only in the Police, Fire, Local Government, Highway Maintenance, Forestry Conservation, Power, Petroleum, Forest Products, Telephone Maintenance, and Railroad Radio Services.

(2) Mobile relay stations will be authorized on frequencies between 450 MHz and 470 MHz in all of the services governed by this part except for the Radiolocation, Motor Carrier, Taxicab and Automobile Emergency Radio Services.

(3) Mobile relay stations will be authorized on frequencies between 470 MHz and 512 MHz in all of the services that have been allocated such frequencies.

(b) Special provisions for mobile relay operations:

(1) In the Special Emergency Radio Service, Medical Services systems in the 150–160 MHz band are permitted to be cross-banded for mobile and central station operations with mobile relay stations authorized to operate in the 450–470 MHz band.

(2) In the Business Radio Service, mobile relay stations operating on frequencies below 450 MHz will only be authorized when all control and mobile stations are operated on frequencies designated for low power operation (2 watts or less). For such operations the maximum output power shall not exceed 1 watt and the mobile relay antenna system shall not be more than 13 m. (40 ft.) above ground.

(3) In the Railroad Radio Service, mobile relay operation shall be on a secondary basis to other co-channel operations.

(4) Except where specifically precluded, a mobile relay station may be authorized to operate on any frequency available for assignment to base stations.

(5) A mobile station associated with mobile relay station(s) may not be authorized to operate on a frequency below 25 MHz.

(c) Technical requirements for mobile relay stations.

(1) Each new mobile relay station with an output power of more than one watt, and authorized after January 1, 1972, that is activated by signals below 50 MHz shall deactivate the station upon cessation of reception of the activating continuous coded tone signal. Licensees may utilize a combination of digital selection and continuous coded tone control where required to insurance selection of only the desired mobile relay station.

(2) Mobile relay stations controlled by signals above 50 MHz or authorized prior to January 1, 1972, to operate below 50 MHz are not required to incorporate coded signal or tone control devices unless the transmitters are consistently activated by undesired signals and cause harmful interference to other licensees. If activation by undesired signals causes harmful interference, the Commission will require the installation of tone control equipment within 90 days of a notice to the licensee.

(3) Except in the Railroad Radio Service, each new mobile-relay station authorized after January 1, 1972, shall be equipped for automatic deactivation of the transmitter within 5 seconds after the signals controlling the station cease.

(4) Except in the Railroad Radio Service, each new mobile relay station authorized after January 1, 1972, during periods that it is not controlled from a manned fixed control point; shall have an automatic time delay or clock device that will deactivate the station not more than 3 minutes after its activation by a mobile unit.

(5) In the Railroad Radio Service, each mobile relay station, regardless of the frequency or frequencies of the signals by which it is activated shall be so designated and installed that it will be deactivated automatically when its associated receiver or receivers are not receiving a signal on the frequency or frequencies which normally activate it.

(6) Multiple mobile relay station radio systems shall use wireline or radio stations on fixed service frequencies of any necessary interconnect circuits between mobile relay stations for the purpose of permitting automatic intercommunications on fixed service frequencies for any spective communication ranges.

§ 90.245 Fixed relay stations.

Except where specifically provided for, fixed relay stations shall be authorized to operate only on frequencies available for use by operational fixed stations.

§ 90.247 Vehicular repeater stations.

A mobile station authorized to operate on a mobile service frequency above 25 MHz may be used as a vehicular repeater to extend the communications range of hand-carried units subject to the following:

(a) Vehicular repeaters and/or associated hand-carried transmitters may be assigned separate base/mobile frequen-

cies for this use (including, in the Railroad Radio Service, any "base only" frequency in the 450–470 MHz range) in addition to the number of frequencies normally assignable to the licensee.

(b) In the Business and Special Industrial Radio Services on frequencies below 450 MHz, only low-power frequencies (2 watts or less output power) may be assigned for use by vehicular repeaters or by hand-carried transmitters whose communications are directed to vehicular repeaters, when separate frequencies are assigned for that purpose.

(c) Except as provided in paragraph (d) of this section, hand-carried transmitters whose communications will be automatically relayed by mobile stations shall be limited to a maximum output power of 2.5 watts.

(d) In the Railroad Radio Service, use of vehicular repeaters is on a secondary basis to the stations of any other licensee. Hand-carried units used in connection with vehicular repeaters in the Railroad Radio Service may operate only above 150 MHz and are limited to a maximum output power of 6 watts. The frequency and maximum power shall be specified in the station authorization.

(e) In the Railroad Radio Service, the output power of a mobile repeater station, when transmitting as a repeater station on the frequency used for communication with its associated park-carried or hand-carried units, shall not exceed 6 watts except when the same frequency is also used by the same station for direct communication with vehicular mobile units or with one or more base stations.

(f) When automatically retransmitting messages originated by or destined for hand-carried units, each mobile station shall activate the mobile transmitter only with a continuous coded tone, the absence of which will de-activate the mobile transmitter. The continuous coded tone is not required when the mobile unit is equipped with a switch that activates the automatic mode of the mobile unit and an automatic time-delay device that de-activates the transmitter after any uninterrupted transmission period in excess of three minutes.

§ 90.249 Control stations.

Control stations associated with land mobile stations under this part shall be authorized to operate subject to the following:

(a) *Frequencies for control stations.* (1) Control stations may be authorized to operate on frequencies available for use by operational fixed stations.

(2) A control station associated with mobile relay station(s) may, at the option of the applicant, be assigned the frequency of the associated mobile station. In the Railroad Radio Service such a control station may be assigned any mobile service frequency available for assignment to mobile stations in that service. Such operation is on a secondary basis to use of the frequency for regular mobile service communications. In the band 450–470 MHz, such operation is subject to the provisions of paragraph (b) of this section.

(3) Control and fixed stations in the Public Safety and Special Emergency Radio Services may be authorized on a temporary basis to operate on frequencies available for base and mobile stations between 152 and 450 MHz, where there is an adequate showing that such operations cannot be conducted on frequencies allocated for assignment to operational fixed stations. Such operation will not be authorized initially or renewed for periods in excess of one year. Any such authorization shall be subject to immediate termination if harmful interference is caused to stations in the mobile service, or if the particular frequency is required for mobile service operations in the area concerned.

(b) Control station operating on frequencies in the band 450–470 MHz shall comply with the following requirements if they are located within 120 km. (75 mi.) of the center of urbanized areas of 200,000 or more population as defined in the U.S. Census of Population, 1960, Vol. 1, Table 23, Page 50. The centers of urbanized areas are determined from the Appendix, Page 226 of the U.S. Commerce Publication "Airline Distance Between Cities in the United States".

(1) If the station is used to control one mobile relay station or two or more mobile relay stations located within 45 degrees of azimuth, a directional antenna having a front-to-back ratio of at least 15 dB shall be used at the control station. For other situations where a directional antenna cannot be used, a cardioid, directional or omnidirectional antenna may be employed. In each case, the antenna used must, be consistent with reasonable design, produce a radiation pattern that provides only the coverage necessary to permit satisfactory control of each mobile relay station, and limit radiation in other directions to the extent feasible.

(2) The strength of the signal of a control station, controlling a single mobile relay station, may not exceed by more than 6 dB, the signal strength produced by a unit of the associated mobile station at the antenna terminal of the mobile relay receiver. When the station controls more than one mobile relay station, the 6 dB control-to-mobile signal difference need be verified at only one of the mobile relay station sites. The measurement of the signal strength of the mobile unit must be made when such unit is transmitting from the control station location or, if that is not practical, from a location within one-fourth mile (0.4 km) of the control station site.

(c) A base station which is used intermittently as a control station for one or more associated mobile relay stations of the same licensee shall operate only on the mobile service frequency assigned to the associated mobile relay station when operating as a base station and on the mobile service frequency assigned to the associated mobile station when operating as a control station. Authority for such dual classification and use must be shown on the station authorization. When operating as a control station, the licensee must meet all control station requirements. In the Railroad Radio Service, base stations used intermittently as control stations shall operate only on a mobile service frequency which is available for assignment to base stations.

Subpart K—Standards for Special Frequencies or Frequency Bands

§ 90.251 Scope.

This subpart sets forth special requirements applicable to the use of certain frequencies (4383.8 kHz) or frequency bands. (27.235–27.275, 72–76, 216–220, 450–470, and 1427–1435 MHz).

§ 90.253 Use of the frequency 4383.8 kHz.

The frequency 4383.8 kHz may be used by any station authorized under this part, to communicate with any other station in the state of Alaska for emergency communications. The maximum power permitted is 150 watts peak envelope power (PEP). Airborne operations will not be permitted. All stations operating on this frequency must be located in or within 50 nautical miles (92.6 km) of the state of Alaska.

§ 90.255 Assignment and use of the frequencies 27.235, 27.245, 27.255, 27.265, and 27.275 MHz.

(a) Effective September 10, 1976, station authorizations for the use of 27.235, 27.245, 27.255, 27.265, and 27.275 MHz will be issued only to applicants in the Personal Radio Services. Licenses in the Radio Services under this part authorizing the use of these frequencies shall remain valid until December 31, 1979, or, if such licenses expire prior to December 31, 1979, they may be renewed and will be given expiration dates of December 31, 1979. Licenses issued under this subpart for frequencies between 26.96 and 27.41 MHz should be modified prior to December 31, 1979, to permit operation on other authorized frequencies.

(b) Prior use of these frequencies is subject to the following limitations:

(1) The bandwidth of emission shall not exceed 8 kHz.

(2) The output power shall be limited to no more than 20 watts.

(3) All operation is subject to interference from the operation of industrial, scientific, and medical devices on the frequency 27.12 MHz.

(4) The frequency 27.255 MHz is shared with the Citizens Radio Service.

§ 90.257 Assignment and use of frequencies in the band 72–76 MHz.

(a) The following criteria shall govern the authorization and use of frequencies within the band 72–76 MHz by fixed stations. (for call box operations see § 90.-241).

(1) The following frequencies in the band 72–76 MHz may be used for fixed operations:

Megahertz

72.02	72.04	72.06	72.08	72.10	72.12	72.14	72.16
72.18	72.20	72.22	72.24	72.26	72.28	72.30	72.32
72.34	72.36	72.38	72.40	72.42	72.46	72.50	72.54
72.58	72.62	72.64	72.66	72.68	72.70	72.72	72.74
72.76	72.78	72.80	72.82	72.84	72.86	72.88	72.90
72.92	72.94	72.96	72.98	75.42	75.46	75.50	75.54
75.58	75.62	75.64	75.66	75.68	75.70	75.72	75.74
75.76	75.78	75.80	75.82	75.84	75.86	75.88	75.90
75.92	75.94	75.96	75.98				

(2) All authorizations are subject to the condition that no harmful interference will be caused to television reception on channels 4 and 5.

(3) The applicant must agree to elimmate any harmful interference caused by his operation to TV reception on either channel 4 or 5 that might develop by whatever means are necessary. Such action must be taken within 90 days of notification by the Commission. If such interference is not eliminated within the 90-day period, operation of the fixed station will be discontinued.

(4) Vertical polarization must be used.

(5) Whenever it is proposed to locate a 72–76 MHz fixed station less than 128 km. (80 mi.) but more than 16 km. (10 mi.) from the site of a TV transmitter operating on either channel 4 or 5, or from the post office of a community in which such channels are assigned but not in operation, the fixed station shall be authorized only if there are fewer than 100 family dwelling units (as defined by the U.S. Bureau of the Census), excluding units 112 or more km. (70 mi.) distant from the TV antenna site, located within a circle centered at the location of the proposed fixed station. The radius shall be determined by use of the following chart entitled, "Chart for Determining Radius From Fixed Station in 72–76 MHz Band to Interference Contour Along Which 10 Percent of Service From Adjacent Channel Television Station Would be Destroyed". Two charts are available, one for channel 4, and one for channel 5. The Commission may, however, in a particular case, authorize the location of a fixed station within a circle containing 100 or more family dwelling units upon a showing that:

(i) The proposed site is the only suitable location.

(ii) It is not feasible, technically or otherwise, to use other available frequencies.

(iii) The applicant has a plan to control any interference that might develop to TV reception from his operations.

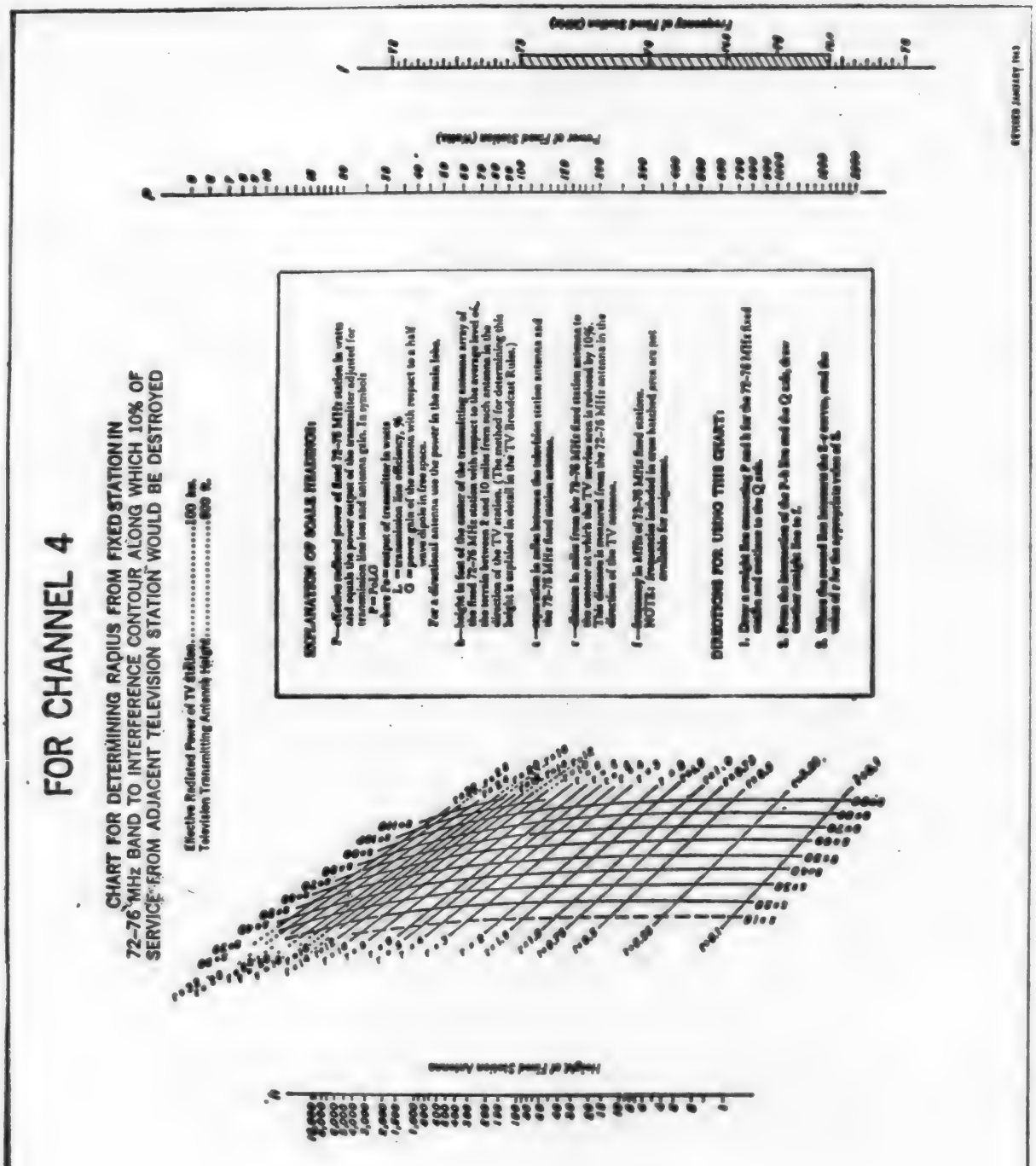
(iv) The applicant is financially able and agrees to make such adjustments in the TV receivers affected as may be necessary to eliminate any interference caused by his operations.

(v) All applications seeking authority to operate with a separation of less than 16 km. (10 mi.) will be returned without action.

(b) The following criteria shall govern the authorization and use of frequencies within the band 72–76 MHz by mobile stations in the Special Industrial, Manufacturers, and Railroad Radio Services.

(1) Mobile operation on frequencies in the 72 to 76 MHz band is subject to condtion that no interference is caused to the reception of television stations operating on channels 4 or 5. Interference will be considered to occur whenever reception of a regularly used television signal is impaired by signals radiated by stations operating under these rules in the 72 to 76 MHz band regardless of the quality of such reception or the strength of the signal used. In order to minimize the hazard of such interference, it shall be the duty of the licensee to determine whether interference is being caused to television reception, wherever television receivers other than those under the control of the licensee, are located within 31m. (100 ft.) of any point where the stations licensed under these rules may be operated. In any case, it shall be the responsibility of the licensee to correct, at its own expense, any such interference and if the interference cannot be eliminated by the application of siutable techniques, the operation of the offending transmitter shall be suspended. If the complainant refuses to permit the licensee to apply remedial techniques which demonstrably will eliminate the interference without impairment of the original reception, the licensee is absolved of further responsibility.

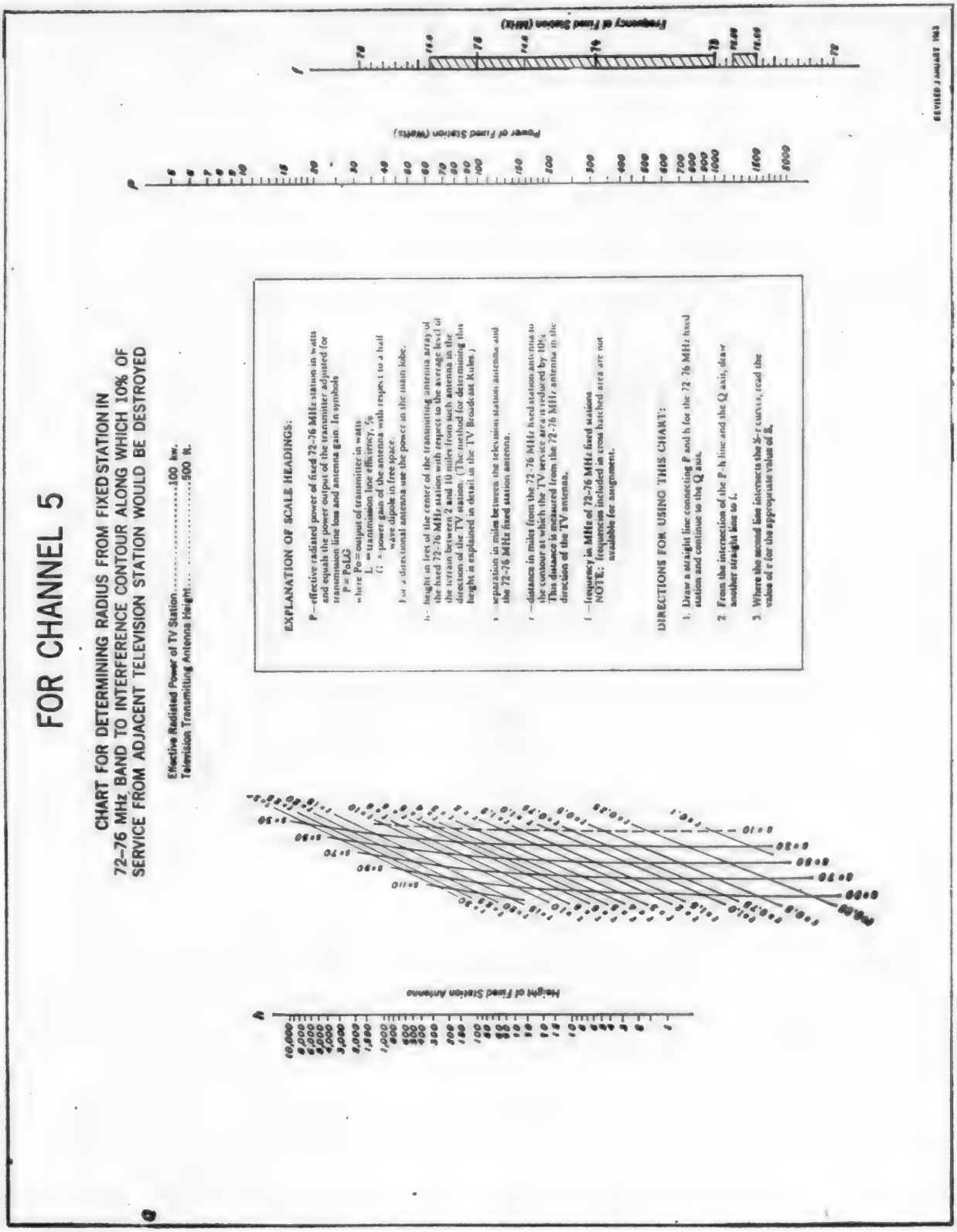
(2) The maximum transmitter output power that will be authorized is .6 watt; and each station authorized will be classified and licensed as a mobile station. Any units of such a station, however, may be used to provide the operational functions of a base or fixed station. The antennas of transmitters operating on these frequencies must be directly mounted or installed upon the transmitting unit: Except that when permanently installed aboard a vehicle, antenna and transmitter may be separated as required for convenience in mounting. Horizontal polarization will not be allowed; and the gain of antennas employed shall not exceed that of a halfwave dipole. The maximum bandwidth that will be authorized is 20 kHz. Tone control transmissions are permitted.


FOR CHANNEL 4
CHART FOR DETERMINING RADIUS FROM FIXED STATION IN 72–76 MHz BAND TO INTERFERENCE CONTOUR ALONG WHICH 10% OF SERVICE FROM ADJACENT TELEVISION STATION WOULD BE DESTROYED
Effective Radiated Power of TV station
Television Transmitting Antenna Height
EXPLANATION OF SCALES IN FIGURE:
DIRECTIONS FOR USING THIS CHART:
Power of Fixed Station (Watts)
Height of Fixed Station Antenna

FOR CHANNEL 5

CHART FOR DETERMINING RADIUS FROM FIXED STATION IN 72–76 MHz BAND TO INTERFERENCE CONTOUR ALONG WHICH 10% OF SERVICE FROM ADJACENT TELEVISION STATION WOULD BE DESTROYED

Effective Radiated Power of TV Station.....100 kw.
Television Transmitting Antenna Height.....500 ft.



EXPLANATION OF SCALE HEADINGS:

P—effective radiated power of fixed 72–76 MHz station in watts and equals the power output of the transmitter adjusted for transmission line loss and antenna gain. In symbols

$P = P_o L_t G$

where P_o = output of transmitter in watts
L_t = transmission line efficiency, %
G = power gain of the antenna with respect to a half wave dipole in free space.

For a directional antenna use the power in the main lobe.

h—height in feet of the center of the transmitting antenna array of the fixed 72–76 MHz station with respect to the average level of the terrain between 2 and 10 miles from such antenna in the direction of the TV station. (The method for determining this height is explained in detail in the TV Broadcast Rules.)

s—separation in miles between the television station antenna and the 72–76 MHz fixed station antenna.

r—distance in miles from the 72–76 MHz fixed station antenna to the contour at which the TV service area is reduced by 10%. This distance is measured from the 72–76 MHz antenna in the direction of the TV antenna.

f—frequency in MHz of 72–76 MHz fixed stations
NOTE: frequencies included in cross hatched area are not available for assignment.

DIRECTIONS FOR USING THIS CHART:

1. Draw a straight line connecting P and h for the 72–76 MHz fixed station and continue to the Q axis.
2. From the intersection of the P–h line and the Q axis, draw another straight line to L.
3. Where the second line intersects the S–r curves, read the value of r for the appropriate value of S.

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§ 90.259 Assignment and use of frequencies in the bands 216–220 MHz and 1427–1435 MHz.

Frequencies in the bands 216–220 MHz and 1427–1435 MHz may be assigned to applicants under this part provided the band is listed in the individual radio service under which they establish eligibility. Use of these bands is limited to telemetering purposes only and all operation is secondary to Federal Government operations. Base stations authorized in this band shall be used to perform telecommand functions with associated mobile telemetering stations. Base stations may also command actions by the vehicle itself, but will not be authorized solely to perform this function. Airborne use will not be authorized. Each application will be coordinated with the Federal Government by the Federal Communications Commission and is subject to such technical and operational limitations as may be imposed by the government. Each application should include precise information concerning emission characteristics, transmitter frequency deviation, output power, type and directional characteristics, if any, of the antenna, and the minimum necessary hours of operation.

§ 90.261 Assignment and use of frequencies in the band 450–470 MHz for fixed operations.

The following frequencies may be assigned for fixed operations, on a secondary basis to land mobile operations, to eligibles in the services indicated. All such use of these frequencies for fixed systems is limited to locations 85 or more miles (136.79 or more km) from the center of any urbanized area of 600,000 or more population, except that the distance may be 65 miles (104.6 km), if the output power does not exceed 20 watts. All such fixed systems are limited to a maximum of two frequencies and must employ directional antennas with a front-to-back ratio of at least 15 dB. For two-frequency systems, the separation between transmit-receive frequencies is 5 MHz. The centers of urbanized areas are determined from the Appendix, Page 226, of the U.S. Commerce publication "Air Line Distance Between Cities in the United States." Urbanized areas of 600,000 or more population are defined in the U.S. Census of Population, 1970, Vol. 1, table 20, pages 1–74.

(a) The following frequencies may be assigned to fixed stations in the Public Safety and Special Emergency Radio Services, on a secondary basis to land mobile operations in the Industrial (except Business) and Land Transportation Radio Services.

FREQUENCIES (MHZ)

451.025	452.150	456.400	457.625
451.050	452.175	456.425	457.650
451.075	452.200	456.450	457.675
451.100	452.225	456.475	457.700
451.125	452.250	456.500	457.725
451.150	452.275	456.525	457.750
451.175	452.300	456.550	457.775
451.200	452.325	456.575	457.800
451.225	452.350	456.600	457.825
451.250	452.375	456.625	457.850
451.275	452.400	456.650	457.875
451.300	452.425	456.675	457.900
451.325	452.450	456.700	457.975
451.350	452.475	456.725	458.000
451.375	452.500	456.750	462.200
451.400	452.525	456.775	462.225
451.425	452.550	456.825	462.250
451.450	452.575	456.850	462.275
451.475	452.700	456.875	462.300
451.500	452.725	456.900	462.325
451.525	452.750	456.925	462.350
451.550	452.775	456.950	462.375
451.575	452.800	456.975	462.400
451.600	452.825	457.000	462.425
451.625	452.850	457.025	462.450
451.650	452.875	457.050	462.475
451.675	452.900	457.075	462.500
451.700	452.975	457.100	462.525
451.725	453.000	457.125	467.200
451.750	456.025	457.150	467.225
451.775	456.050	457.175	467.250
451.825	456.075	457.200	467.275
451.850	456.100	457.225	467.300
451.875	456.125	457.250	467.325
451.900	456.150	457.275	467.350
451.925	456.175	457.300	467.375
451.950	456.200	457.325	467.400
451.975	456.225	457.350	467.425
452.000	456.250	457.375	467.450
452.025	456.275	457.400	467.475
452.050	456.300	457.425	467.500
452.075	456.325	457.450	467.525
452.100	456.350	457.475	
452.125	456.375	457.500	

(b) The following frequencies may be assigned to fixed stations in the Industrial Radio Services (except Business) on a secondary basis to land mobile operations in the Public Safety, Special Emergency, and Land Transportation Radio Services.

FREQUENCIES MHZ

452.050	453.525	457.800	460.175
452.100	453.550	457.825	460.200
452.150	453.575	457.850	460.225
452.200	453.600	457.875	460.250
452.225	453.625	457.900	460.275
452.250	453.650	458.050	460.300
452.275	453.675	458.100	460.325
452.300	453.700	458.150	460.350
452.325	453.725	458.200	460.375
452.350	453.750	458.225	460.400
452.375	453.775	458.250	460.425
452.400	453.800	458.275	460.450
452.425	453.825	458.300	460.475
452.450	453.850	458.325	460.500
452.475	453.875	458.350	460.525
452.500	453.900	458.375	460.550
452.625	453.925	458.400	460.575
452.650	453.950	458.425	460.600
452.675	453.975	458.450	460.625
452.700	457.050	458.475	465.025
452.725	457.100	458.500	465.050
452.750	457.150	458.525	465.075
452.775	457.200	458.550	465.100
452.800	457.225	458.575	465.125
452.825	457.250	458.600	465.150
452.850	457.275	458.625	465.175
452.875	457.300	458.650	465.200
452.900	457.325	458.675	465.225
453.050	457.350	458.700	465.250
453.100	457.375	458.725	465.275
453.150	457.400	458.750	465.300
453.200	457.425	458.775	465.325
453.225	457.450	458.800	465.350
453.250	457.475	458.825	465.375
453.275	457.500	458.850	465.400
453.300	457.525	458.875	465.425
453.325	457.550	458.900	465.450
453.350	457.575	458.925	465.475
453.375	457.600	458.950	465.500
453.400	457.625	458.975	465.525
453.425	457.650	460.025	465.550
453.450	457.675	460.050	465.575
453.475	457.700	460.075	465.600
453.500	457.725	460.100	465.625
	457.750	460.125	
	457.775	460.150	

(c) The following frequencies may be assigned to fixed stations in the Land Transportation Radio Services on a secondary basis to land mobile operations in the Public Safety and Industrial (except Business) Radio Services.

FREQUENCIES MHZ

451.025	453.500	457.075	460.550
451.050	453.525	457.125	460.575
451.075	453.550	457.175	460.600
451.100	453.575	457.975	460.625
451.125	453.600	458.000	462.200
451.150	453.625	458.050	462.225
451.175	453.650	458.100	462.250
451.200	453.675	458.300	462.275
451.225	453.700	485.225	462.300
451.275	453.750	458.350	462.325
451.300	453.775	458.275	462.350
451.325	453.800	458.300	462.375
451.350	453.825	458.325	462.400
451.375	453.850	458.350	462.425
451.400	453.875	458.375	462.450
451.425	453.900	458.400	462.475
451.450	453.925	458.425	462.500
451.475	453.950	458.450	462.525
451.500	453.975	458.475	465.025
451.525	456.025	458.500	465.050
451.550	456.050	458.525	465.075
451.575	456.075	458.550	465.100
451.600	456.100	458.575	465.125
451.625	456.125	458.600	465.150
451.650	456.150	458.625	465.175
451.675	456.175	458.650	465.200
451.700	456.200	458.675	465.225
451.725	456.225	458.700	465.250
451.750	456.250	458.725	465.275
451.775	456.275	458.750	465.300
451.825	456.300	458.775	465.325
451.850	456.325	458.800	465.350
451.875	456.350	458.825	465.375
451.900	456.375	458.850	465.400
451.925	456.400	458.875	465.425
451.950	456.425	458.900	465.450
451.975	456.450	458.925	465.475
452.000	456.475	458.950	465.500
452.025	456.500	460.025	465.525
452.075	456.525	460.050	465.550
452.125	456.550	460.075	465.575
452.175	456.575	460.100	465.600
452.975	456.600	460.125	465.625
453.000	456.625	460.150	467.200
453.050	456.650	460.175	467.225
453.100	456.675	460.200	467.250
453.150	456.700	460.225	467.275
453.200	456.725	460.525	467.300
453.225	456.750	460.250	467.325
453.250	456.775	460.275	467.350
453.275	456.825	460.300	467.375
453.300	456.850	460.325	467.400
453.325	456.875	460.350	467.425
453.350	456.900	460.375	467.450
453.375	456.925	460.400	467.475
453.400	456.950	460.425	467.500
453.425	456.975	460.450	467.525
453.450	457.000	460.475	
453.475	457.025	460.500	

(d) Frequencies subject to section 90.75(c)(26) may be used secondarily for fixed operations subject to the technical limitations of this section.

§ 90.263 Substitution of frequencies below 25 MHz.

Frequencies below 25 MHz when shown in radio service frequency listings under this part will be assigned to base or mobile stations only upon a satisfactory

showing that, from a safety of life standpoint, frequencies above 25 MHz will not meet the operational requirements of the applicant. These frequencies are available for assignment in many areas; however, in individual cases such assignment may be impracticable due to conflicting frequency use authorized to stations in other services by this and other countries. In such cases, a substitute frequency, if found to be available, may be assigned from the following bands 1605–1750, 2107–2170, 2194–2495, 2505–2850, 3155–3400, or 4438–4650 kHz. Since such assignments are in certain instances subject to additional technical and operation limitations, it is necessary that each application also include precise information concerning transmitter output power, type and directional characteristics, if any, of the antenna, and the minimum necessary hours of operation. (This section is not applicable to the Radiolocation Radio Service, Subpart P.)

Subpart L—Authorization in the Band 470–512 MHz (UHF–TV Sharing)

§ 90.301 Scope.

This subpart governs the authorization and use of frequencies by land mobile stations in the band 470–512 MHz on a geographically shared basis with Television Broadcast stations. Under this special sharing plan, different radio services are allocated different specific frequencies in this band depending upon the geographic urban area involved as fully detailed in the following rule sections.

§ 90.303 Availability of frequencies.

(a) Frequencies in the band 470–512 MHz are available for assignment in the urbanized areas listed below. The specific frequencies available to each radio service are listed in Section 90.311.

Frequency availability for land mobile use

Urbanized area	Geographic center		Channel	Frequencies (megahertz)
	North latitude	West longitude		
Boston, Mass.	42°21'24"	71°03'24"	14	470-476
			16	482-488
Chicago, Ill.[1]	41°52'28"	87°38'22"	14	470-476
			15	476-482
Cleveland, Ohio [2]	41°29'51"	81°41'50"	14	470-476
			15	476-482
Dallas/Fort Worth, Tex.	32°47'09"	96°47'37"	16	482-488
Detroit, Mich.[3]	42°19'48"	83°02'57"	15	476-482
			16	482-488
Houston, Tex.	29°45'26"	95°21'37"	17	488-494
Los Angeles, Calif.	34°03'15"	118°14'28"	14	470-476
			20	506-512
Miami, Fla.	25°46'37"	80°11'32"	14	470-476
New York	40°45'06"	73°59'39"	14	470-476
Northeastern N.J.			15	476-482
Philadelphia, Pa.	39°56'58"	75°09'21"	19	500-506
			20	506-512
Pittsburgh, Pa.	40°26'19"	80°00'00"	14	470-476
			18	494-500
San Francisco	37°46'30"	122°24'40"	16	482-488
Oakland, Calif.			17	488-494
Washington, D.C.	38°53'51"	77°00'33"	17	488-494
Maryland			18	494-500
Virginia				

[1] In the Chicago, Ill., urbanized area, channel 15 frequencies may be used for paging operations in addition to low power base/mobile usages, where applicable protection requirements for ultrahigh frequency television stations are met.
[2] Channels 14 and 15 are not available in Cleveland, Ohio, until further order from the Commission.
[3] Channels 15 and 16 are not available in Detroit, Mich., until further order from the Commission.

§ 90.305 Location of stations.

(a) The transmitter site(s) for base station(s), including mobile relay stations, shall be located not more than 80 km. (50 mi.) from the geographic center of the urbanized area listed in § 90.303.

(b) Mobile units shall be operated within 48 km. (30 mi.) of their associated base station or stations. Such units may not be operated aboard aircraft in flight.

(c) Control stations must be located within the area of operation of the mobile units.

(d) Base and control stations shall be located a minimum of 1.6 km. (1 mi.) from local television stations operating on UHF TV channels separated by 2, 3, 4, 5, 7, and 8 TV channels from the television channel in which the base station will operate.

§ 90.307 Protection criteria.

The tables and figures listed in § 90.309 shall be used to determine the proper power (ERP) and antenna height of the proposed land mobile base station and the proper power (ERP) for the associated control station (control station antenna height shall not exceed 31 m. (100 ft.) above average terrain (AAT)).

(a) Base stations operating on the frequencies available for land mobile use in any listed urbanized area and having an antenna height (AAT) less than 152 m. (500 ft.) shall afford protection to co-channel and adjacent channel television stations in accordance with the values set out in Tables A and E of this subpart, except for Channel 15 in New York, N.Y., and Cleveland, Ohio, and Channel 16 in Detroit, Mich., where protection will be in accordance with the values set forth in Tables B and E.

(b) For base stations having antenna heights between 152–914 meters (500–3,000 ft.) above average terrain, except as noted in paragraph (f), the effective radiated power must be reduced below 1 kilowat in accordance with the values shown in the power reduction graph in Figure A, except for Channel 15 in New York, N.Y., and Cleveland, Ohio, and Channel 16 in Detroit, Mich., where the effective radiated power must be reduced in accordance with Figure B. For heights of more than 152 m. (500 ft.) above average terrain, the distance to the radio path horizon will be calculated assuming smooth earth. If the distance so determined equals or exceeds the distance to the Grade B contour of a co-channel TV station, (Grade B contour defined in Section 73.683(a)) an authorization will not be granted unless it can be shown that actual terrain considerations are such as to provide the desired protection at the Grade B contour, or that the effective radiated power will be further reduced so that, assuming free space attenuation, the desired protection at the Grade B contour will be achieved.

(c) Mobile units and control stations operating on the frequencies available for land mobile use in any given urbanized area shall afford protection to co-channel and adjacent channel television stations in accordance with the values set forth in Table C and paragraph (d) of this section except for Channel 15 in New York N.Y., and Cleveland, Ohio, and Channel 16 in Detroit, Mich., where protection will be in accordance with the values set forth in Table D and paragraph (d) of this section.

(d) The minimum distance between a land mobile base station and a protected adjacent channel television is 90 miles (145 km) when mobile units are associated with it.

(e) The television stations to be protected (co-channel, adjacent channel, IM, and IF) in any given urbanized area, in accordance with the provisions of subparagraphs (a), (b), (c), and (d) of this paragraph, are identified in the Commission's publication "TV stations to be considered in the preparation of Applications for Land Mobile Facilities in the Band 470–512 MHz." The publication is available at the offices of the Federal Communications Commission at Washington, D.C. or upon the request of interested persons.

(f) For stations in the Los Angeles urbanized area with antenna elevations of 457 m. or more (1,500 ft.) above sea level, the maximum authorized effective radiated power (ERP) shall be in accordance with the following table:

Antenna height (above sea level)	Power, effective radiated power (watts)
1,500 to 2,000 ft (457 to 609 m)	155
2,000 to 2,500 ft (609 to 762 m)	100
2,500 to 3,000 ft (762 to 914 m)	70
3,000 to 3,500 ft (914 to 1,066 m)	50
3,500 to 4,000 ft (1,066 to 1,219 m)	40
4,000 to 4,500 ft (1,219 to 1,371 m)	30
Above 4,500 ft (1,371 m)	25

NOTE.—Existing stations may continue to use presently authorized powers until Jan. 1, 1980.

§ 90.309 Tables and figures.

(a) *Directions for using the tables.*

(1) Using the method specified in 73.611 or charts or maps of suitable scale, determine the distances (i) between the proposed land mobile base station and the protected co-channel television station and (ii) between the proposed land mobile base station and the protected adjacent channel television station. If the exact mileage does not appear in Table A for protected co-channel television stations (or Table B for Channel 15 in New York and Cleveland and Channel 16 in Detroit) or Table E for protected adjacent channel television stations, the next lower mileage separation figure is to be used.

(2) Entering the proper table at the mileage figure found in paragraph (1) above, find opposite, a selection of powers that may be used for antenna heights ranging from 50 (15 m) to 500 (152 m) feet (AAT). If the exact antenna height proposed for the land mobile base station does not appear in the proper table, use the power figure beneath the next greater antenna height.

(3) The lowest power found using the tables mentioned in (1) and (2) above is the maximum power that may be employed by the proposed land mobile base station.

(4) In determing the average elevation of the terrain, the elevations between 2 (3 km) and 10 (16 km) miles from the antenna site are employed. Profile graphs shall be drawn for eight radials beginning at the antenna site and extending 10 (17 km) miles. The radials should be drawn for each 45° of azimuth starting with true north. At least one radial should be constructed in the direction of the nearest co-channel and adjacent channel UHF television stations. The profile graph for each radial shall be plotted by contour intervals of from 40 (12 m) to 100 (30 m) feet and, where the data permits, at least 50 points of elevation (generally uniformly spaced) should be used for each radial. For very rugged terrain 200 (61 m) to 400 (122 m) feet contour intervals may be used. Where the terrain is uniform or gently sloping, the smallest contour interval indicated on the topographic charte may be used. The average elevation of the 8-mile distance between 2 (3 km) and 10 (17 km) miles from the antenna site should be determined from the profile graph for each radial. This may be obtained by averaging a large number of equally spaced points, by using a planimeter, or by obtaining the median elevation (that exceeded by 50 percent of the distance) in sectors and averaging those values. In the preparation of the profile graphs the elevation or contour intervals shall be taken from U.S. Geological Survey Topographic Quadrangle Maps, U.S. Army Corps of Engineers Maps, or Tennessee Valley Authority Maps (Scale 1:2400) whichever is the latest. If such maps are not published for the area in question, the next best topographic information should be used.

(5) Applicants for base stations in the Miami, Fla., urbanized area may, in lieu of calculating the height of average terrain, use 10 feet (3 m) as the average terrain height.

TABLE A.—*Base station—cochannel frequencies (50 dB protection) maximum effective radiated power (ERP)*[1]

	Antenna height in feet (AAT)									
	50 (15 m)	100 (30 m)	150 (45 m)	200 (61 m)	250 (76 m)	300 (91 m)	350 (106 m)	400 (122 m)	450 (137 m)	500 (152 m)
Distance in miles:[2]										
162 (260 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
160 (257 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	800
155 (249 km)	1,000	1,000	1,000	1,000	1,000	875	775	700	625	575
150 (241 km)	1,000	1,000	950	775	725	625	550	500	450	400
145 (233 km)	850	750	650	575	500	440	400	350	320	300
140 (225 km)	600	575	475	400	350	300	275	250	230	225
135 (217 km)	450	400	335	300	255	240	200	185	165	150
130 (209 km)	350	300	245	200	185	160	145	125	120	100
125 (201 km)	225	200	170	150	125	110	100	90	80	75
120 (193 km)	175	150	125	105	90	80	70	60	55	50

[1] The effective radiated power (ERP) and antenna height above average terrain (AAT) shall not exceed the values given in this table.
[2] At this distance from transmitter site of protected UHF television station.

TABLE B.—*Base Station—cochannel frequencies (40 dB protection) maximum effective radiation power (ERP)*[1]

	Antenna height in feet (AAT)									
	50 (15 m)	100 (30 m)	150 (45 m)	200 (61 m)	250 (76 m)	300 (91 m)	350 (106 m)	400 (122 m)	450 (137 m)	500 (152 m)
Distance in miles:[2]										
130 (209 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
125 (201 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	850	750	725
120 (193 km)	1,000	1,000	1,000	1,000	900	750	675	600	550	500
115 (185 km)	1,000	1,000	800	725	600	525	475	425	375	350
110 (177 km)	850	700	600	500	425	375	325	300	275	225
105 (169 km)	600	475	400	325	275	250	225	200	175	150
100 (161 km)	400	325	275	225	175	150	140	125	110	100
95 (153 km)	275	225	175	125	110	95	80	70	60	50
90 (145 km)	175	125	100	75	50					

[1] The effective radiated power (ERP) and antenna height above average terrain (AAT) shall not exceed the values given in this table.
[2] At this distance from transmitter site of protected UHF television station.

TABLE C—*Mobile and control station—distance between associated base station and protected cochannel TV station*

[50 dB protection]

	Distance	
	Miles	Kilometers
Effective radiated power (watts) of mobile unit and control station:		
200	155	249
150	151	243
100	145	233
50	135	217
25	125	201
10	117	188
5	112	180

TABLE D—*Mobile and control station—distance in miles between associated land mobile base station and protected co-channel television station*

[40 dB protection]

	Distance	
	Miles	Kilometers
Effective radiated power (watts) of mobile unit and control station:		
200	130	209
150	125	201
100	120	193
50	115	185
25	110	177
10	105	169
5	100	161

TABLE E.—*Base station adjacent channel frequencies maximum effective radiated power (ERP)*[1]

	Antenna height in feet (AAT)									
	50 (15 m)	100 (30 m)	150 (45 m)	200 (61 m)	250 (76 m)	300 (91 m)	350 (106 m)	400 (122 m)	450 (137 m)	500 (152 m)
Distance in miles:[2][3]										
67 (108 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
66 (106 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	750
65 (104 km)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	825	650	600
64 (103 km)	1,000	1,000	1,000	1,000	1,000	1,000	775	625	500	400
63 (101 km)	1,000	1,000	1,000	1,000	1,000	650	450	325	325	225
62 (99 km)	1,000	1,000	1,000	1,000	525	375	250	200	150	125
61 (98 km)	1,000	1,000	700	450	250	200	125	100	75	50
60 (96 km)	1,000	1,000	425	225	125	100	75	50		

[1] The effective radiated power (ERP) and antenna height above average terrain (AAT) shall not exceed the values given in this table.
[2] At this distance from transmitter site of protected UHF television station.
[3] The maximum distance is 90 miles (145 km) where there are mobile units associated with the base station. See sec. 90.307(d).

TABLE "F"

DECIBEL REDUCTION/POWER EQUIVALENTS

dB reduction below 1 kw:	*E.R.P. permitted (figures rounded)*
1	795
2	630
3	500
4	400
5	315
6	250
7	200
8	160
9	125
10	100
11	80
12	65
13	50
14	40
15	30
16	25
17	20
18	15
19	12
20	10
21	8
22	6
23	5
24	4
25	3
26	2.5
27	2
28	1.5
29	1.25
30	1

(b) *Directions for Using the Figures.*

(1) Determine antenna height above average terrain. (According to 90.309(a)(4)).

(2) Locate this value on the antenna height axis.

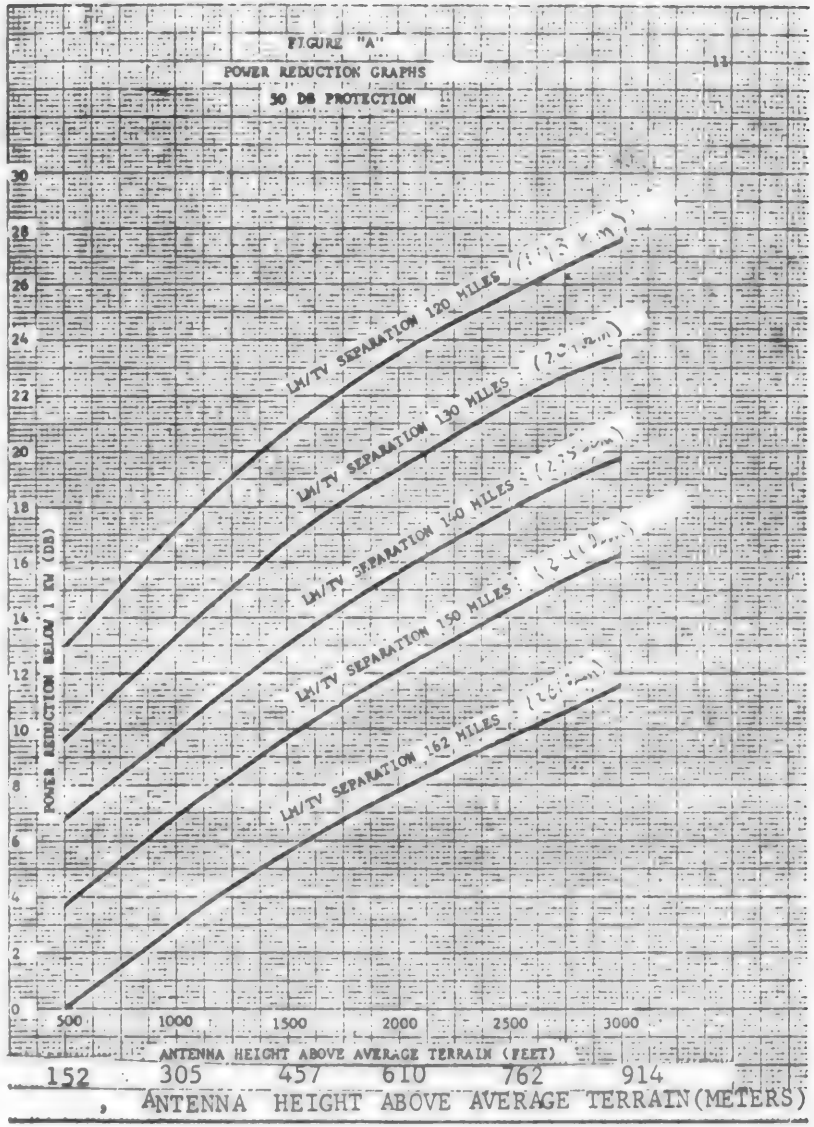
(3) Determine the separation between the LM antenna site and the nearest protected co-channel TV station. (According to 73.611)

(4) Draw a vertical line to intersect the LM/TV separation curve at the distance determined in step 3 above. For distances not shown on the graph use linear interpolation.

(5) From the intersection of the LM/TV separation curve draw a horizontal line to the power reduction scale.

(6) The power reduction in dB determines the reduction below 1 kw that must be achieved.

(7) See Table F for dB power equivalents.



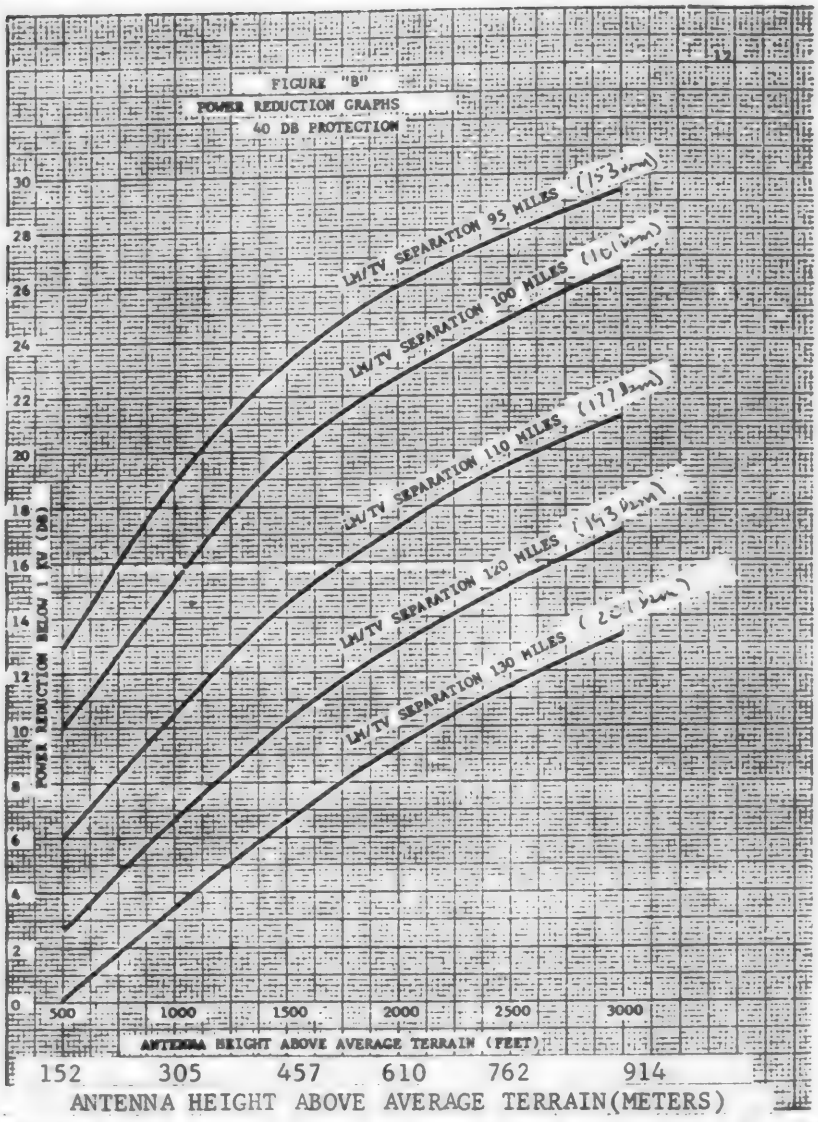


FIGURE "B"
POWER REDUCTION GRAPHS
40 DB PROTECTION
LM/TV SEPARATION 95 MILES (153 km)
LM/TV SEPARATION 100 MILES (161 km)
LM/TV SEPARATION 110 MILES (177 km)
LM/TV SEPARATION 120 MILES (193 km)
LM/TV SEPARATION 130 MILES (209 km)
POWER REDUCTION BELOW 1 KW (DB)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
500 1000 1500 2000 2500 3000
ANTENNA HEIGHT ABOVE AVERAGE TERRAIN (FEET)
152 305 457 610 762 914
ANTENNA HEIGHT ABOVE AVERAGE TERRAIN (METERS)

§ 90.311 Frequencies.

Except as provided for in § 90.315, the following frequencies in the band 470–512 MHz may be assigned to eligibles in the services as indicated below. The first and last assignable frequencies are shown. Assignable frequencies occur in increments on 25 kHz. The separation between base and mobile transmit frequencies is 3 MHz for two frequency operation.

These frequency charts will be included in the forthcoming Report and Order. They will be identical to those adopted in the Docket 20909 proceeding.

(1) Channel availability in the General Access Pool in any of the urbanized areas referred to in the table depends upon whether that channel is presently assigned to users in one of the service pools. If unassigned, or should a channel subsequently become unassigned, it will be treated as available in the General Access Pool.

(2) Frequencies in the General Access Pool will be made available to applicants after all channels presently assigned are substantially loaded in accordance with the standards set out in 90.313 of this section. Channels from the General Access Pool will be assigned starting with the lowest frequency available at the time and progress towards the high end of the General Access Pool. Normally, each channel should be substantially filled before the next one will be assigned.

(b) Miami, Fla., Dallas, Tex., and Houston, Tex. urbanized areas.

Channel 14 (Miami)	Channel 16 (Dallas)	Channel 17 (Houston)
470.3125 to 475.9875	482.3125 to 487.9875.	488.3125 to 493.9875.

(1) Base station frequencies for the Public Safety Radio Service will be assigned serially beginning at 470.7125 MHz for Miami, 482.7125 MHz for Dallas, and at 488.7125 MHz for Houston and progressing a channel at a time upward and downward from those points.

(2) Base station frequencies for the Petroleum, Forest Products, and Manufacturers Radio Services will be assigned serially beginning at 470.3125 MHz for Miami, 482.3125 MHz for Dallas, and 488.3125 MHz for Houston and progressing upward from those points a channel at a time.

(3) Base station frequencies for the Special Industrial Radio Service will be assigned serially beginning at 471.4375 MHz for Miami, 483.4375 MHz for Dallas, and 489.4375 MHz for Houston and progressing a channel at a time upward and downward from those points.

(4) Base station frequencies for the Business Radio Service will be assigned serially beginning at 472.3625 MHz for Miami, 484.3625 MHz for Dallas, and 489.3625 MHz for Houston and progressing a channel at a time upward and downward from those points.

(5) Base station frequencies for the Power and Telephone Maintenance Radio Services will be assigned serially beginning at 471.2625 MHz for Miami, 483.2625 MHz for Dallas, and 489.2625 MHz for Houston and progressing a channel at a time upward and downward from those points.

(6) Base station frequencies for the Railroad, Motor Carrier, and Automobile Emergency Radio Services will be assigned serially beginning at 471.7825 MHz for Miami, 483.7825 MHz for Dallas, and 489.7825 MHz for Houston and progressing upward and downward from those points a channel at a time.

(7) Base station frequencies for the Taxicab Radio Service will be assigned serially beginning at 472.9875 MHz for Miami, 484.9875 MHz for Dallas, and 490.9875 MHz for Houston and progressing a channel at a time downward from those points.

§ 90.313 Frequency loading criteria.

(a) Except as provided for in paragraph (b), the maximum channel loading on frequencies in the 470–512 MHz band is as follows:

(1) 50 units in the Public Safety Radio Services.

(2) 70 units in the Industrial Radio Services (except business).

(3) 90 units in the Business Radio Service.

(4) 150 units in the Taxicab Radio Service, except in the New York Northeast New Jersey urbanized areas where the loading is 200 units.

(5) 70 units in the Railroad, Motor Carrier, and Automobile Emergency Radio Services except in the intra-urban passenger carrier sub-category of the Motor Carrier Radio Service where the loading is 150 units.

(b) If a licensee has exclusive use of a frequency, then the loading standards in paragraph (a) may be exceeded. If it

is a shared channel, the loading standards can be exceeded upon submission of a signed statement by all those sharing the channel agreeing to the increase.

(c) A unit is defined as one vehicular mobile unit or two hand-carried transmitter-receivers for the Public Safety Services, three hand-units for the Industrial, and Land Transportation Services. Loading standards will be applied in terms of the number of units actually in use or to be placed in use within 8 months following authorization. A licensee will be required to show that an assigned frequency pair is at full capacity before it may be assigned a second or additional frequency pair. Channel capacity may be reached either by the requirements of a single licensee or by several users sharing a channel. Until a channel is loaded to capacity it will be available for assignment to other users in the same area. A frequency pair may be reassigned at distances 64 km. (40 mi.), (32 km. (20 mi.) for Channel 15, Chicago: Channel 20, Philadelphia and Channel 17, Washington or more from the location of base stations authorized on that pair without reference to loading at the point of original installation. Following authorization, the licensee shall notify the Commission either during or at the close of the 8 months period of the number of units in operation. In the Industrial Radio Services, if the base station facility is to be used by more than a single licensee, the frequency assigned to it will not be reassigned for use by another facility within 64 km. (40 mi.) or 32 km. (20 mi.) where applicable) for a period of 12 months, *Provided*, That the facility is constructed within 90 days from the date of the first grant, meets the loading standards to at least 50 percent within 9 months, and meets all loading standards within 12 months.

§ 90.315 Special provisions governing use of frequencies in the 488–494 MHz band (TV Channel 17) in the Southern Louisiana Offshore Zone.

(a) The frequency bands from 490–491 and 493–494 MHz will be available for assignment to stations governed by this part within the Southern Louisiana Offshore Zone. The boundaries of the Southern Louisiana Offshore Zone are from longitude 87°45′ on the east to longitude 94°00′ on the west, and from the three mile limit along the Gulf of Mexico shoreline on the north to the limit of the outer continental shelf on the south. These frequencies may also be assigned to fixed stations located on shore designed to provide communications service within the zone.

(b) Offshore Base/Mobile, and offshore and shore fixed stations may be authorized.

(c) F2, F3, F4, F9, and A2, A3, A4, and A9 emissions may be authorized.

(d) Offshore stations shall afford co-channel protection to TV Channel 17, Bude, Miss. Station operating parameters shall be in accordance with the values given in Table I.

TABLE 1.—*Protection of cochannel television stations by offshore stations operating in the southern Louisiana zone (65 dB protection); maximum effective radiated power (in watts)*

	Antenna height above sea level		
	100 ft	150 ft	200 ft
Distance from transmitter to TV channel 17, Bude, Miss. (in miles):			
210	1,000	1,000	1,000
205	1,000	900	800
200	800	710	630
195	590	520	450
190	450	400	330
185	320	280	240
180	250	210	175
175	175	150	130
170	130	110	100
165	95	80	70
160	65	55	50
155	50	40	35
150	35	30	25

NOTE.—To determine the maximum permissible effective radiated power:

(1) As specified in sec. 73.611 determine the distance between the proposed station and channel 17, Bude, Miss. If the exact mileage does not appear in table 1, the next lower mileage separation is to be used.

(2) Opposite this mileage figure ERPs are given that may be used for antenna heights of 100, 150, or 200 ft ASL. If the exact antenna height is not shown, the ERP allowed will be that shown for the next higher antenna height.

(e) Shore stations communicating point-to-point with offshore stations will be permitted at least the same ERP as the offshore station, but only in the direction of the offshore station. A directional antenna shall be used and the rearward radiated power from the antenna in a sector ±22½° from the line joining the shore antenna to Bude, Miss., shall not exceed those shown in Table 2.

TABLE 2.—*Maximum rearward effective radiated power allowed for shore stations in the southern Louisiana zone; rearward effective radiated power (in watts) from shore antenna in a sector ±22½° from the line joining the shore antenna to Bude, Miss.*

	Antenna height above ground					
	100 ft	150 ft	200 ft	300 ft	500 ft	750 ft
Distance from transmitter to TV channel 17, Bude, Miss. (in miles):						
185	320	280	240	190	125	90
180	250	210	175	125	100	60
175	175	150	130	100	70	50
170	130	110	100	75	40	35
165	95	82	70	50	35	25
160	65	55	50	40	25	20
155	50	40	35	30	20	15
150	35	30	25	20	15	10
145	25	20	18	15	10	7
140	18	15	13	10	7	5
135	13	10	9	7	5	3
130	10	8	6	5	3	2
125	7	6	5	4	3	2
120	5	4	3	3	2	1

NOTE.—As an example of the use of tables 1 and 2, assume an offshore station located 180 mi from Bude, Miss. with an antenna height of 100 ft. Table 1 allows this station to operate with 250 W ERP. Now assume the shore station communicating with the offshore station is 30 mi from the offshore station and 150 mi from Bude, Miss. The shore station antenna height is 500 ft above ground. The shore station will be allowed the same ERP as the offshore station (250 W) in the direction of the offshore station. Table 2 indicates that the effective radiated power in a sector ±22½° from the line joining the shore antenna to Bude, Miss. can only be 15 W. Consequently, a directional antenna must be used whose minimum front-to-back ratio over this 45° sector must be at least 12.2 dB. (250 W forward power to 15 W rearward power is a power ratio of 16.6 or 12.2 dB).

(f) To provide co-channel protection to TV Channel 17, no shore station will be allowed closer than 120 miles from Bude, Miss., coordinates 31° 22′ 19″ N and 90° 45′ 05″ W.

(g) To provide adjacent channel protection to TV Channel 18 in Lake Charles, Louisiana, no shore or offshore stations shall be allowed within an 80 mile distance of Lake Charles, Louisiana, whose coordinates are 30°13′45″, N and 93°12′52″ W.

(h) Surface mobile stations shall not operate with an effective radiated power in excess of 25 watts within 20 miles of the three mile limit. In all other areas, the effective radiated power shall not exceed 100 watts with 30 foot maximum antenna height.

(i) No airborne station shall be operated with an effective radiated power in excess of 1 watt or at heights in excess of 1,000 feet above mean sea level and shall not be operated outside the limits of the zone specified in Table A. However, to provide adjacent channel protection to TV channel 18, no airborne subscriber station shall operate within an 80 mile radial distance of Lake Charles, Louisiana.

(j) The following frequencies are available for assignment in all services for use in the Southern Louisiana Zone as defined in paragraph (a) of this section.

PAIRED FREQUENCIES (MHz)

Transmit (or receive)	*Receive (or transmit)*
490.025–490.975	493.025–493.975

Only the first and last assignable frequencies are shown. Frequencies shall be assigned in pairs with 3 MHz spacing between transmit and receive frequencies. Assignable frequency pairs shall occur in increments of 25 kHz.

(k) Fixed stations operating point-to-point shall be assigned frequencies beginning with 490.025/493.025 MHz and progressing upwards utilizing available frequencies towards the end of the band. Offshore Base/mobile stations shall be assigned frequencies beginning at 490.975/493.975 MHz and progressing downwards utilizing available frequencies towards the beginning of the band. All frequency assignments are subject to the conditions specified in § 91.8.

(l) Bandwidths other than 25 kHz may be authorized upon an adequate showing of need. An application requesting such authorization shall fully describe the modulation, emission and

bandwidth desired, the bandwidth to be occupied, and justification for the request.

Subpart M—Special Regulations Governing Licensing and Use of Frequencies in the 806–821 MHz and 851–866 MHz Bands

§ 90.351 Scope.

This subpart sets out the regulations governing the licensing and operations of conventional and trunked stations authorized in the 806–821 MHz and 851–866 MHz bands. It includes eligibility requirements, application procedures, operational, and technical standards for stations licensed in these bands. The rules in this subpart are to be read in conjunction with the applicable requirements contained elsewhere in this part; however, in case of conflict, the provisions of this subpart shall govern with respect to licensing and operation in these frequency bands.

§ 90.353 Definitions.

Conventional radio system. A method of operation in which one or more radio frequency channels are assigned to mobile and base stations but are not employed as a trunked group. An "urban-conventional system" is one whose transmitter site is located within 15 miles (24 km) of the geographic center of any of the first 50 urbanized areas (ranked by population) of the United States. A "suburban-conventional system" is one whose transmitter site is located more than 15 miles (24 km) from the geographic center of the first 50 urbanized areas. See Table 21, Rank of Urbanized Areas in the United States by Population, Page 1–87, U.S. Census (1970); and Table 1 of paragraph (h) of 90.365.

Geographic center. The geographic center of an urbanized area is defined by the coordinates given at Table 1 of paragraph (h) of § 90.365.

Trunk (telephony). A one or two-way channel provided as a common traffic artery between switching equipment.

Trunk group. All of the trunks of a given type or characteristic that extend between two switching points.

Trunked radio system. A method of operation in which a number of radio frequency channel pairs are assigned to mobile and base stations in the system for use as a trunk group.

Applications for Authorizations in the 806–821 MHz and 851–866 MHz Bands

§ 90.355 Eligibility.

The following persons are eligible for licensing in the 806–821 MHz and 851–866 MHz bands.

(a) Any person eligible for licensing under Subparts B, C, D, or E of this part.

(b) Any person proposing to provide private dispatch service to any person eligible for licensing under Subpart B, C, D, or E of this part on a not-for-profit, cost-shared basis.

(c) Any person except wire line telephone common carriers proposing to provide, on a commercial basis, base station and ancillary facilities for the use of persons eligible for licensing under Subparts B, C, D, or E of this part.

§ 90.357 Forms to be used.

Applications for conventional and trunked radio facilities shall be submitted on FCC Form 400, and such applications shall be filed with the Commission, at its offices in Washington, D.C. Where the facility is to be established in the Chicago Regional area FCC Form 425 shall be used and all such applications shall be filed with the Chicago Regional Office. In addition, FCC Form 400–S shall be filed by all applicants.

§ 90.359 Supplemental information to be furnished by applicants for facilities under this subpart.

(a) Applicants for conventional or trunked systems of communication shall, in addition to the information required by FCC Form 400 or FCC Form 425, furnish the following data and material:

(1) Where the applicant is a person proposing to provide dispatch service to eligibles under § 90.179 on a not-for-profit, cost-shared basis, he shall furnish:

(i) A copy of the plan or agreement under which service will be offered. It must be in sufficient detail to show that such service will be provided at cost.

(ii) A statement of the purposes for which the system is to be used and of the planned mode of operation.

(iii) The names and addresses of each person to participate in the sharing arrangement.

(iv) A statement showing that each participant is eligible to use the system for the purposes for which it is to be employed.

(2) Where the applicant is a person proposing to provide dispatch service to eligibles under this part on a commercial basis, he shall supply:

(i) A statement of the purposes for which the system is to be used and of the planned mode of operation.

(ii) A statement certifying that no person not eligible to use the proposed facility for the purposes for which it is to be authorized will be offered or provided service over or through the licensee's base station facility.

(iii) A copy of the basic agreement under which the dispatch service will be offered.

(3) Where the applicant is subject to the provisions of § 90.373 he shall furnish the following information:

(i) A list of any trunked stations licensed to the applicant.

(ii) A list of any trunked stations licensed to any other person or entity directly or indirectly controlled by the applicant or which directly or indirectly controls the applicant.

(4) All applicants for conventional radio systems shall furnish a list of all conventional radio systems licensed to them or proposed by them within 64 km. (40 mi.) from the location of the base station transmitter site of the facility applied for.

(b) All applicants for conventional systems shall specify the number of vehicle or portable units to be placed in operation upon grant of the authorization and the number of such units that will be placed in operation within 8 months of the date of grant.

(c) All applicants of trunked systems shall specify the number of mobile units to be placed in operation within the term of the license; Provided, however, Where the applicant applies for more than the minimum 5 channels, and elects to construct in 5-channel stages, he shall so specify and shall state the number of mobile units to be placed in operation by the end of two years from the date of the grant of his station authorization.

(d) Each applicant shall furnish a functional system diagram illustrating the inter-relationship of all stations being applied for, together with technical details (including antenna height (AAT) and effective radiated power (ERP)), together with his proposed area of coverage and the signaling methods he will employ.

§ 90.361 Special limitations on amendment of applications for assignment or transfer of authorizations for radio systems used to provide service to persons other than the licensee.

(a) No application for a conventional or trunked radio system proposing radio facilities to be made available for use by a single user or by multiple users on a commercial basis may be amended so as to substitute a new entity except in the following circumstances:

(1) The amendment does not involve a substantial change in the ownership or control of the applicant; or

(2) The changes in the ownership or control of the applicant are involuntary due to the original applicant's insolvency, bankruptcy, incapacity, or death.

(b) A license to operate a radio facility for the purposes described in paragraph (a) of this section may not be assigned or transferred prior to the completion of construction of the facility; *Provided, however,* The Commission may give its consent to the assignment or transfer of control of such a license where the applicant shows:

(1) That the assignment or transfer does not involve a substantial change in ownership or control of the authorized radio facilities; or,

(2) That the assignment or transfer is involuntary due to the licensee's insolvency, bankruptcy, incapacity, or death.

Policies Governing the Processing of Applications and the Selection and Assignment of Frequencies for Use in the 806–821 MHz and 851–866 MHz Bands

§ 90.363 Processing of applications.

Applications for facilities to operate in the 806–821 MHz and 851–866 MHz bands will be processed as follows:

(a) All applications will first be considered to determine whether they are substantially complete and acceptable for filing. If so, they will be assigned a file number and put in pending status.

If not, they will be returned to the applicant.

(b) All applications in pending status will be processed in the order in which they are received. The order in which they are received will be determined by the time and date on which the original proposal was filed with the Commission.

(c) Each application will then be reviewed to determine whether it can be granted. Should it be granted, frequencies or channels will be assigned by the Commission in accordance with its assignment policies and loading criteria.

(d) Where, upon examination, it is determined that the proposal must be dismissed, that application will be returned; and the priority accorded it will no longer obtain.

(e) Where, upon examination, it is determined that the proposal cannot be granted or dismissed, but that it must be designated for hearing, such action will be taken.

§ 90.365 Selection and assignment of frequencies.

(a) The Commission will select and assign frequencies for operation in the 806–821 MHz and 851–866 MHz bands.

(1) For trunked systems, the assignment of frequencies will be made, in accordance with applicable loading criteria, in minimum groups of five and in maximum groups of twenty channel pairs. All mobile and control station frequencies will be chosen from those allocated in the 806–821 MHz band. Mobile station transmitting frequencies will commence with Channel No. 1 at 820.9875 MHz, followed by Channel No. 2 at 820.9625 MHz, and proceed to the band end with uniform 25 kHz channeling; and base station transmitting frequencies will be selected by the Commission and assigned from those allocated in the 851–866 MHz band, commencing with Channel No. 1 at 865.9875 MHz, followed by Channel No. 2 at 865.9625 MHz, and proceed to the band end with uniform 25 kHz channeling. The spacing between associated mobile and base station frequencies shall be, uniformly, 45 MHz.

(2) For conventional systems the assignment of frequencies will be made in accordance with applicable loading criteria. Accordingly, depending upon the number of mobile units to be served, the applicant may either be required to share a channel, or, if the applicant shows a sufficient number of mobile units to warrant the assignment of one or more channels for its exclusive use, he may be licensed to use such channel or channels on an exclusive basis in his area of operation.

(3) For conventional systems, mobile station transmitting frequencies, as well as those for use by control stations, will be selected from those allocated in the 806–821 MHz band. Mobile and control station transmitting frequencies will commence with Channel No. 1 at 806.0125 MHz, followed by Channel No. 2 at 806.0375 MHz, and proceed to the band end with uniform 25 kHz channeling. Base station transmitting frequencies will be selected and assigned from those allocated in the 851–866 MHz band, with Channel No. 1 commencing at 851.0125 MHz, followed by Channel No. 2 at 851.0375 MHz, and proceed to the band end with uniform 25 kHz channeling. The spacing between associated mobile and base station frequencies shall be, uniformly, 45 MHz.

(b) Stations authorized by the Commission to operate in the 806–821 and 851–866 MHz band will be afforded protection solely on the basis of the mileage separation criteria set out below. Only co-channel interference between base station operations will be taken into consideration. Adjacent channel and other types of possible interference will not be taken into account.

(1) For trunked systems, the minimum separation between co-channel systems must be 112 km. (70 mi.) except that no trunked system shall be less than 168 km. (105 mi.) distant from co-channel wide area trunked systems on any of the following mountain top sites: Santiago Peak, Sierra Peak, Mount Lukens, Mount Wilson (California).

(2) For urban-conventional systems, co-channel base stations will be authorized only when the separation between the centers of the urban areas involved is at least 160 km. (100 mi.).

(3) For suburban-conventional systems, co-channel base stations will be authorized only when the separation between the centers of the suburban loading areas involved is at least 176 km. (110 mi.).

(4) For a suburban conventional system to operate co-channel with an urban conventional system, the distance between the center of the urban area and the center of the suburban loading area must be at least 176 km. (110 mi.).

(5) The minimum distance from any of the following four sites: Santiago Peak, Sierra Peak, Mount Lukens, and Mount Wilson (California) to the center of the nearest co-channel "urban" area, must be 192 km. (130 mi.) and to the center of the nearest co-channel suburban loading area (for a suburban-conventional station), must be 208 km. (130 mi.).

(c) Notwithstanding the provisions of paragraph (b)(2) of this section, where an assigned channel of an urban-conventional system is not fully loaded in accordance with applicable loading criteria, and where the transmitter site of that system is located within 24 km. (15 mi.) from the center of the urbanized area involved, the Commission may issue additional authorizations for facilities to be located within 24 km. (15 mi.) of the center of that urbanized area until the channel in question is occupied in conformity with applicable loading criteria.

(d) Notwithstanding the provisions of paragraph (b)(3) of this section, where an assigned channel of a suburban-conventional system is not fully loaded in accordance with applicable loading criteria, the Commission may issue additional authorizations for facilities to be located within 40 km. (25 mi.) of the transmitter site of the first station authorized until the channel in question is occupied in conformity with applicable loading criteria.

(e) Notwithstanding the provisions of paragraph (b)(5) of this section, where a channel is assigned for use at either Santiago Peak, Sierra Peak, Mount Lukens, or Mount Wilson (California) and the channel is not fully loaded in accordance with applicable loading criteria, the Commission may issue additional authorizations for wide-area-coverage facilities to be located at the same site area until the channel in question is occupied in conformity with applicable loading criteria. A channel previously assigned at one such site area may not be used at any of the three remaining designated mountain-top sites.

(f) UHF television translator stations using UHF output channels from Channel 70 through Channel 83, shall operate on a secondary basis to land mobile stations using the UFH bands allocated under this subpart for land mobile use, and, accordingly, such television translator stations will not be protected from interference from such authorized land mobile stations.

(g) Pending further negotiations with Canada and Mexico, land mobile stations operating in the 806–890 MHz band shall do so on a secondary basis to any Canadian or Mexican television station placed in operation on television channels in this band.

(h) See table below:

TABLE 1. *Urbanized areas*

Urbanized area	Geographic center	
	North latitude	West longitude
Akron, Ohio	41°05'00"	81°30'44"
Albany-Schenectady-Troy, N.Y.	42°39'01"	73°45'01"
Atlanta, Ga.	33°45'10"	84°23'37"
Baltimore, Md.	39°17'26"	76°36'45"
Birmingham, Ala.	33°31'01"	86°48'36"
Boston, Mass.	42°21'24"	71°03'24"
Buffalo, N.Y.	42°53'12"	78°52'30"
Chicago, Ill.	41°52'28"	87°38'22"
Cincinnati, Ohio	39°08'07"	84°30'35"
Cleveland, Ohio	41°29'51"	81°41'50"
Columbus, Ohio	39°57'47"	83°00'17"
Dallas, Tex.	32°47'09"	96°47'37"
Dayton, Ohio	39°45'32"	84°11'43"
Denver, Colo.	39°44'56"	104°59'22"
Detroit, Mich.	42°19'48"	83°02'57"
Fort Lauderdale-Hollywood, Fla.	26°07'30"	80°09'00"
Fort Worth, Tex.	32°44'55"	97°19'44"
Houston, Tex.	29°45'26"	95°21'37"
Indianapolis, Ind.	39°46'07"	86°09'46"
Jacksonville, Fla.	30°19'44"	81°39'42"
Kansas City, Mo.-Kans.	39°04'56"	94°35'20"
Los Angeles, Calif.	34°03'15"	118°14'28"
Louisville, Ky.-Ind.	38°14'47"	85°45'49"
Miami, Fla.	25°46'37"	80°11'32"
Memphis, Tenn-Mississippi	35°08'46"	90°03'13"
Milwaukee, Wis.	43°02'19"	87°54'15"
Minneapolis-St. Paul, Minn.	44°58'57"	93°18'43"
New Orleans, La.	29°56'53"	90°04'10"
New York-northeastern New Jersey	40°45'06"	73°50'39"
Norfolk-Portsmouth, Va.	36°51'10"	76°17'21"
Oklahoma City, Okla.	35°28'28"	97°31'04"
Omaha, Nebr.-Iowa	41°15'42"	95°56'14"
Philadelphia, Pa.-New Jersey	39°56'58"	75°09'21"
Phoenix, Ariz.	33°27'12"	112°04'28"
Pittsburgh, Pa.	40°26'19"	80°00'00"

§ 90.367 Limitation on the number of frequencies assignable for conventional systems.

(a) The maximum number of frequency pairs that may be assigned to

any one licensee for the operation of a conventional radio system shall be five, except for licensees in the Taxicab Radio Service.

(b) Where an applicant proposes to operate a conventional radio system to provide facilities for the use of a single person or entity eligible under Subparts B, C, D, or E of this part, he may be assigned only the number of frequency pairs justified on the basis of the requirements of the proposed user of the system.

(c) No more than five frequency pairs may be assigned to any person proposing to operate one or more conventional radio systems to provide facilities for use by more than a single entity, if there is any overlap of the 40 dBu contour of the proposed new facility and any of the 40 dBu contours of any station authorized to that person, or to any person or entity in which he has a direct or indirect interest.

NOTE.—For the purposes of this subsection, the 40 dBu contour is assumed to be that obtained using maximum effective radiated power and antenna height permitted by this subpart.

§ 90.369 Other criteria to be applied in assigning channels for use in conventional systems of communication.

(a) In every case, the Commission will examine a proposal to determine the requirements of the applicant in terms of the number of mobile units to be served, together with the nature of the activities the applicant is engaged in. Where the applicant shows that the channel will be loaded to 70 percent of its assigned capacity, as defined in § 90.377 then that channel will be made available to that applicant for his exclusive use in the area in which he proposes to operate. Where the showing made justifies the assignment of more than one channel to the applicant, then additional frequencies will be made available for his use.

(b) Where an applicant proposes to furnish service to eligibles under Subparts B, C, D, or E of this part on a commercial basis, using a conventional system of communication, his application will be considered on the same basis as that of an applicant for private or shared communication facilities.

(c) In loading channels, the Commission will further consider the mode of operation planned; the purposes for which the system is to be used, as noted; the persons to be served by the station and other factors. The other factors shall include the following:

(1) Mobile relay or repeater operations will not be assigned on channels to be used in two-frequency simplex mode, and conversely.

(2) Systems employing full duplex mode of operation will not be licensed on frequencies assigned for mobile relay or two-frequency simplex systems.

(3) Applicants in one service group, where possible, will not be required to share with applicants in other service groups, where the loading criteria of the services involved are different, except where circumstances require it.

(4) Push-to-talk operations will not be licensed on channels which are to be used under other modes of operation, except in those cases where it is shown that such method of operation is feasible.

(d) The Commission, in addition to the foregoing standards, set out at paragraph (c) of this section, may take into consideration any other factor which might enable the persons licensed to use a given channel or channels in more efficient and effective ways.

(e) There shall be no limit on the number of systems authorized to operate in any one given area except that imposed by allocation limitations; and no person authorized to operate any radio facility under the provisions of this subpart shall have a right to protest proposals on grounds other than violation of or inconsistency with the provisions of this subpart. All grants are made subject to this condition and to the other conditions and standards set out in this chapter.

(f) No applicant shall be required to obtain any approval from a state or local regulatory authority to operate facilities authorized pursuant to these rules. State or local regulation may be exercised only to the extent that it does not limit competition or otherwise conflict with these rules. There shall be no limit on the number of systems authorized to operate in any one given area except that imposed by allocation limitations; and no person authorized to operate any radio facility under the provisions of this subpart shall have a right to protest proposals on grounds other than violation of or inconsistency with the provisions of this subpart. All grants are made subject to this condition and to the other conditions and standards set out in this subpart.

§ 90.371 Limitation on the number of frequency pairs assignable for trunked systems and on the number of trunked systems.

(a) The maximum number of frequency pairs that may be assigned for the operation of a trunked radio system shall be twenty. The minimum number of frequencies that may be assigned for the operation of such a system shall be five.

(b) No more than a single trunked system will be authorized to any one licensee to provide radio facilities for the use of more than a single person or entity where the 40 dBu contour of the proposed facility will overlap the 40 dBu contour of any existing facility of the licensee, or of any concern in which he has a direct or indirect interest, or for which applications are pending, except where the applicant shows:

(1) That the additional trunked system will be used to provide radio facilities for a single entity, where the additional system is justified on the basis of the requirements of the proposed single user or,

(2) That radio systems previously authorized to the applicant are being operated to at least 90 percent of their authorized capacity.

NOTE.—For the purposes of this paragraph, the 40 dBu contour is assumed to be that obtained using maximum effective radiated power and antenna height permitted by this chapter.

§ 90.373 Restriction on licensing manufacturers in the 806–821 MHz and 851–866 MHz bands.

No person engaged in the manufacture or production of radio frequency ("RF") equipment to be used in systems authorized under this subpart, or any person directly or indirectly controlled (through stock ownership or otherwise) by such manufacturing entity, may be licensed to operate more than one trunked system of communication to be used in providing base station and ancilliary facilities to eligibles under Subpart B, C, D or E of this part.

CHANNEL LOADING REQUIREMENTS FOR TRUNKED AND CONVENTIONAL SYSTEMS OPERATING IN THE 806–821 AND 851–866 MHz BANDS

§ 90.375 Trunked systems loading requirements.

(a) Trunked systems of communication will be authorized on the basis of the loading criteria set out in this section.

(b) See table below:

TABLE 1.—*Loading requirements for trunked systems*

Service group [1]	Vehicular radio units [2]		
	5-channel systems	10-channel systems	20-channel systems
Police and fire group	300	750	1,500
Business radio group [3]	500	1,000	2,000
Motor carrier group (urban and interurban passenger motor carriers only)	800	1,600	2,500
Other services group [3]	400	[illegible]	1,600
Mixed service group	500	1,000	2,000

[1] No provision is made for use for trunked systems by persons eligible in the taxicab radio service, since this mode of communication is not compatible with normal transmission requirements of taxicab companies.

[2] For loading trunked systems of communication, no distinction is made between vehicular and portable mobile units.

[3] When the primary activity of the licensee is the operation of urban or interurban passenger motor carriers, the loading requirements shall be as shown for the motor carrier group.

(c) Each applicant for trunked facilities shall certify that a minimum of 70 percent of the mobile units specified in his application will be placed in operation not later than the date on which the term of his license for the system expires.

(d) Any licensee, at any time his authorized trunked system is occupied to 90 percent of its specified capacity, may appy for additional channels. Assignments will be made based, first, upon the availability of frequencies for use by the licensee; and, second, based upon the showing made by the licensee of its requirements for additional channel pairs.

(e) Licensees of trunked facilities must commence construction within six months from the date of grant and complete construction within one year; Provided, however, That a licensee of a "trunked" facility assigned more than the minimum five-channel group may elect to construct the facility in stages. In this event, the licensee shall complete construction of the basic five-channel group of the authorized facility within the time limits given above; Provided, further, That should the licensee elect to proceed in this manner, then he must demonstrate that at the end of a two-year period from the date of the grant of his station authorization, the constructed facility is occupied to a minimum of 70 percent of the loading required, notwithstanding the provisions of paragraph (c) of this section.

§ 90.377 Conventional systems loading requirements.

(a) Conventional systems of communication will be authorized on the basis of the loading criteria set out in this section.

(b) See table below:

TABLE 1.—*Loading requirements for conventional systems*

Service group	Channel loading-units per channel vehicular/portable		
	Single/licensee	2 to 5 licensees	Over 5 licensees
Police and fire group	50/100	40/80	30/60
Business radio group	90/180	70/140	50/100
Taxicab radio group [1]	150	120	100
Motor carrier radio group (urban and interurban passenger motor carriers, only)	150/300	125/250	100/200
Other services group [2]	70/140	50/100	40/60
Mixed service group		70/140	50/100

[1] No loading criteria for portable units in the taxicab radio group are given, since the requirements for units of this type has not been established in that service.
[2] Where the primary activity of the licensee is the operation of urban or interurban passenger motor carriers, the loading requirements shall be as shown for the motor carrier group.

(c) Every applicant for a conventional system of communication shall certify that a minimum of 70 percent of the mobile units specified in his application will be placed in operation not later than 8 months after the date of grant of his license for the system.

(d) Where licensees, authorized under the provisions of paragraph (c) of this section, do not load the channel or channels assigned in accordance with specified loading criteria, any (assigned channel) not so occupied shall be available for assignment to other applicants. All authorizations for conventional systems are issued subject to this condition.

(e) Any licensee, at any time its authorized conventional system is occupied to 90 percent of its specified capacity, may apply for additional channel pairs. Assignments will be made based, first, upon the availability of frequencies for use by the licensee, and, second, based upon the showing made by the licensee of its requirements for additional channel pairs.

TECHNICAL REGULATIONS REGARDING THE USE OF FREQUENCIES IN THE 806–821 MHz AND 851–866 MHz BANDS

§ 90.379 Limitations on power and antenna height.

(a) The maximum effective radiated power and antenna height, respectively, for base stations used in suburban-conventional systems of communication operating in the 851–866 MHz band shall be no greater than 500 watts (27 dBw) and 152 m. (500 ft.) above average terrain (AAT), or the equivalent thereof determined from Table 1 of paragraph (c) of this section. These are maximum values, and applicants will be required to justify power levels and antenna heights requested. For service area requirements less than 32 km. (20 mi.) in radius, see Table 3 of paragraph (c) of this section.

(b) The maximum effective radiated power and antenna height, respectively, for base stations used in trunked and urban conventional systems authorized in the 851–866 MHz band shall be no greater than 1 kilowatt (30 dBw) and 304 m. (1000 ft.) above average terrain (AAT), or the equivalent thereof determined from Table 1 of paragraph (c) of this section. These are maximum values, and applicants will be required to justify power levels and antenna heights requested. For service area requirements less than 32 km. (20 mi.) in radius, see Table 3 of paragraph (c) of this section.

(c) See table below:

TABLE 1.—*Equivalent powers and antenna heights for base stations in the 851–866 MHz band which have a requirement for a 32 km (20 mi) service area radius*

Antenna height (AAT) (feet) (meters)	Effective radiated power (watts) [1, 2]	
	Urban/trunked	Suburban
Above 5,000	65	15
4,501 to 5,000	65	15
4,001 to 4,500	70	20
3,501 to 4,000	75	25
3,001 to 3,500	100	30
2,501 to 3,000	140	35
2,001 to 2,500	200	50
1,501 to 2,000	350	80
1,001 to 1,500	600	160
501 to 1,000	[3] 1,000	300
Up to 500	1,000	[4] 400

[1] Power is given in terms of effective radiated power (ERP).
[2] Applicants in the Los Angeles, Calif., area who demonstrate a need to serve both the downtown and fringe areas will be permitted to utilize an ERP of 1 kw at the following mountaintop sites: Santiago Peak, Sierra Peak, Mount Lukens, and Mount Wilson.
[3] Stations with antennas below 1,000 ft (AAT) will be restricted to a maximum power of 1 kw (ERP).
[4] Stations with antenna below 500 ft (AAT) will be restricted to a maximum power of 500 W (ERP).

TABLE 2.—*Equivalent powers and antenna heights for suburban-conventional base stations in the 851–866 MHz band which have a requirement for less than 20 mi service area radius—maximum effective radiated power (watts)*

Service area radius, miles (kilometers)	Base station antenna height (AAT) (feet)					
	401–500	301–400	201–300	101–200	51–100	0–50
20 (32)	500	500	500	500	500	500
19 (30)	400	500	500	500	500	500
18 (29)	310	385	500	500	500	500
17 (27)	235	300	385	500	500	500
16 (26)	175	220	285	440	500	500
15 (24)	130	160	215	330	500	500
14 (22)	95	120	155	240	480	500
13 (21)	70	85	115	175	350	500
12 (19)	50	60	80	125	250	500
11 (18)	35	45	60	90	180	360
10 (16)	25	30	40	60	120	240
9 (14)	15	20	25	40	80	160
8 (13)	10	12	15	25	50	100
7 (11)	6	7	10	15	30	60
6 (10)	3	4	5	7	15	30
5 (8) or less	1	2	3	4	8	16

TABLE 3.—*Equivalent powers and antenna heights for urban-conventional and trunked system base stations in the 851–866 MHz band which have a requirement for less than 20 mi service area radius—maximum effective radiated power (watts)*

Service area radius (miles)	Base station antenna height (AAT)							
	751–1,000	501–750	401–500	301–400	201–300	101–200	51–100	0–50
20	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
19	800	1,000	1,000	1,000	1,000	1,000	1,000	1,000
18	640	830	1,000	1,000	1,000	1,000	1,000	1,000
17	480	625	960	1,000	1,000	1,000	1,000	1,000
16	360	470	720	900	1,000	1,000	1,000	1,000
15	270	350	540	675	875	1,000	1,000	1,000
14	200	260	400	500	650	1,000	1,000	1,000
13	140	180	280	350	450	700	1,000	1,000
12	100	135	200	250	325	500	1,000	1,000
11	70	90	140	175	230	350	700	1,000
10	45	60	90	110	145	220	440	1,000
9	30	40	60	75	100	150	300	600
8	20	25	40	50	65	100	200	400
7	15	20	30	40	50	80	160	320
6	8	10	16	20	25	40	80	160
5 or less	5	6	9	12	15	25	50	100

(d) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

§ 90.381 Restrictions on operational fixed stations.

(a) Except for control stations, operational fixed operations will not be authorized in the 806–821 and 851–866 MHz bands.

(1) Control stations associated with one or more mobile relay stations will be authorized only on the assigned frequency of the associated mobile station. Use of a mobile service frequency by a control station of a mobile relay system is subject to the condition that harmful interference not be caused to stations of licensees authorized to use the frequency for mobile service communication.

(2) Control stations shall in all cases employ directional antennas with the main lobe of radiation directed toward the station, or stations, being controlled. In each case, the antenna used, consistent with reasonable design, shall produce a radiation pattern that provides only the coverage necessary to permit satistfactory control of each mobile relay station and limits radiation in other directions to the extent feasible.

(3) The strength of the signal of a control station, controlling a single mobile relay station, may not exceed, by more than 6 dB, at the antenna terminal of the mobile relay receiver, the signal strength produced there by a unit of the associated mobile station. When the fixed station controls more than one mobile relay station, the 6 dB control-to-mobile signal difference need be verified at only one of the mobile relay station sites. The measurement of the signal strength of the mobile unit must be made when such unit is transmitting from the control station location or, if that is not practical, from a location which is not more than one-fourth mile from the control station site.

(4) Each application for a control station to be authorized under the provisions of this paragraph shall be accompanied by a statement certifying that the output power of the proposed transmitter will be adjusted to comply with the foregoing signal level limitation. Records of the measurements used to determine the signal ratio shall be kept with the station records and shall be made available, upon request, for inspection by Commission personnel.

§ 90.383 Acceptability of transmitters for licensing in the 806–821 and 851–866 MHz bands.

Except for transmitters used in developmental stations, each transmitter utilized by a station authorized for operation in these bands must be a type which is included on the Commission's current Radio Equipment List, or be of a type which has been type-accepted by the Commission for use in these bands.

OPERATING REQUIREMENTS IN THE 806–821 MHz AND 851–866 MHz BANDS

§ 90.385 Restrictions and limitations on permissible communications, on use, and on mode of operation.

(a) Systems licensed to provide service to persons or entities eligible under Subparts B, C, D, or E of this part may, in conformity with the following restrictions, be used:

(1) Only for purposes expressly allowed under this part.

(2) Only by persons who are eligible for facilities, either under this subpart or in the radio services included under Subparts B, C, D, or E of this part.

(3) Only for the transmission of messages or signals permitted in the service in which the participants are eligible.

(4) Only in the private dispatch mode of operation.

(b) Except as provided at paragraph (c) of this section, radio systems licensed under this subpart may be used for voice communications (telephony), only.

(c) Notwithstanding any contrary provisions in this subpart, a system licensed for use by a person or entity eligible under Subparts B, C, D, or E of this part may be employed for any purpose or operated in any manner, including the use of F2, F4, and F9 emissions, which is consistent with the regulations governing the service in which the user is eligible: Provided, That the loading standard which applies to the system is met and the channel or channels are assigned to that person or entity for its exclusive use.

§ 90.387 Station identification.

(a) Conventional systems of communication shall be identified in accordance with existing regulation governing such matters.

(b) Trunked systems of communication shall be identified through the use of an automatic device which transmits the call sign of the base station facility at 30-minute intervals. Such station identification shall be made on the lowest frequency in the base station trunk group assigned to the licensee. Should this frequency be in use at the time station identification is required, such identification may be made at the termination of the communication in progress on this frequency. Identification may be by voice or International Morse Code. When the call sign is transmitted in International Morse Code, it should be at a rate of between 15 to 20 words per minute; and it should be transmitted by the means of tone modulation of the transmitter, the tone frequency being between 800 and 1000 hertz. The level of modulation is to be high enough to be clearly discernible, but low enough not to be disruptive of voice communications in progress.

§ 90.389 Restriction on interconnection.

Radio systems licensed under this subpart may be interconnected with the wire line facilities of any telephone company; Provided, however, Such interconnection is accomplished at a control point or control station, which is situated at a fixed location (not in a mobile unit), licensed to the user, where a person immediately responsible for the operation of the base station is on duty, and where all of the requirements of § 90.429 are met. Provided, further, That such interconnection may not be accomplished at any control station or control point facility licensed to or used by, any person other than the licensee.

§ 90.391 Supplemental reports required of licensees authorized under this subpart.

(a) Licensees providing service to persons eligible either under Subparts B, C, D, or E of this part on a not-for-profit, cost-shared basis, shall, prior to furnishing service to any user not previously identified, notify the Commission of his intention to do so and furnish the Commission with sufficient information as to the prospective user to enable it to determine whether this person is eligible to participate in the sharing arrangement. Service to the participant may commence 30 days ofter such notification, unless the licensee is advised, in writing, of any deficiency in the licensees' showing or in the eligibility of the person to be served. In the latter case, until the deficiency is corrected or the user is shown to be qualified and eligible, he may not participate in the use of the system.

(b) Where a licensee provides service under the terms of an agreement, on a not-for-profit, cost-shared basis, such agreement may not be modified in any material respect until the changes in the terms and conditions are reported to, and approved by the Commission.

(c) Where a licensee provides service on a commercial basis, he shall not modify, in any material respect, the basic agreement under which such service is provided until the changes in its terms and conditions are reported to, and approved by, the Commission.

(d) Licensees offering service on a commercial basis to any person or entity eligible under either Subpart B, C, D, or E of this part, or to the public, must report, annually and at the time of filing applications for renewal of license, the number of mobile units being serviced; and such licensees shall, at that time, give the name and full address of each customer; the number of mobile units operated by each of them; and such other data as the party reporting may feel would be helpful in determining channel occupancy of the system, together with a certification that the terms of the basic agreement under which service is provided have not been modified or changed in any material respect. Such data shall be current as of the day and date falling 30 days prior to the date on which such licensees are required to file for renewal of their licenses, or, for the annual reports, at the close of the 12-month period covered by the annual report. The licensees of systems of the type covered by the provisions of this rule shall maintain records which, if referred to, will support any of the information required to be filed in the subject report. These records shall be available to the Commission upon request.

(e) Licensees furnishing service to eligible persons on a not-for-profit, cost-shared basis, shall, within 30 days of the close of the first full calendar year of operation, and each year thereafter, submit a report setting out the following information:

(1) A certification that during the period covered by the report, services have been offered and provided in accordance with the terms and conditions of the agreement approved by the Commission; that said agreement has not been notified or changed, except with the express approval of the Commission; and that records have been kept which show that service and facilities were made available on a not-for-profit, cost-shared basis. These records shall be available to the Commission upon request.

(2) A list of persons served during the period covered by the report.

(3) The number of mobile units operated by each user and a statement showing whether these units are of the vehicular or portable type.

(4) The total number of units served by the system during the period of the report, together with the number served on January 1st and on December 31st of the year of the report, and the average number of such mobile units served during this period of time.

(f) Licensees of trunked systems serving only themselves shall report annually, and at the time of filing applications for renewal of licenses, the number of mobile units being served, together with such other data as the licensees may feel would be helpful to the Commission in determining channel occupancy of their systems. Records supporting the information required in these reports shall be maintained by the licensees and shall be available to the Commission upon request.

(g) All licensees of conventional systems, in addition to the other requirements of this section, shall report the number of vehicular and portable units placed in operation within 8 months of the date of the grant of his license. Such reports shall be filed within 30 days from that date.

(h) All licensees of trunked systems shall report, within seven (7) months of the date of the grant, whether or not construction of the authorized facility has begun, and, within thirteen months of the date of the grant, whether or not construction of the facility has been completed.

Other Provisions Governing the Use of the 806–821 MHz and 851–866 MHz Bands

§ 90.393 Special conditions governing the furnishing of radio equipment by licensees.

Every licensee of a trunked or conventional system furnishing base station facilities on a commercial basis, under this subpart, shall afford users the option of purchasing, leasing, or renting the associated control and mobile station radio gear. Should a user elect to lease or to rent the equipment and should the lease or rental arrangement involve no more than five (5) transmitting/receiving units, the user must be given the further right to cancel the lease or rental agreement at any time, without penalty, on ten days' written notice.

§ 90.395 Number of systems authorized in a geographical area.

There shall be no limit on the number of trunked systems authorized to operate in any one given area except that imposed by allocation limitations and no person authorized to operate any trunked radio facility shall have a right to protest any other proposal on grounds other than violation of any inconsistency with the provisions of this subpart. All grants are made subject to the conditions and standards set out in this subpart.

§ 90.397 Special licensing requirements for radio systems used to provide service to persons other than the licensee.

Where a conventional or a trunked radio system is to be used to provide radio facilities to a single user or to multiple users, on a commercial basis, any associated control points, control stations, and mobile radio stations shall be authorized only to the user of those particular facilities.

Subpart N—Operating Requirements

§ 90.401 Scope.

The subpart prescribes general operating requirements for stations licensed under this part. This includes station operating procedures, points of communication, permissible communications, methods of station identification, control requirements, and station record keeping requirements.

§ 90.403 General operating requirements.

(a) Each licensee shall restrict all transmissions to the minimum practicable transmission time and shall employ an efficient operating procedure designed to maximize the utilization of the spectrum.

(b) Communications involving the imminent safety-of-life or property are to be afforded priority by all licensees.

(c) Licensees shall take reasonable precautions to avoid causing harmful interference. This includes monitoring

the transmitting frequency for communications in progress and such other measures as may be necessary to minimize the potential for causing interference.

(d) Stations licensed in this part shall not continuously radiate except where required for tests as permitted in Section 93.405, except where specifically permitted by this part, where specifically authorized in the station authorization, or on an as needed basis in the Radiolocation Radio Service.

(e) The radiations of the transmitter shall be suspended immediately upon detection or notification of a deviation from the technical requirements of the station authorization and until such deviation is corrected. For transmissions concerning the imminent safety-of-life or property, the transmissions shall be suspended as soon as the emergency is terminated.

§ 90.405 Permissible communications.

Stations licensed under this part may transmit only the following types of communication:

(a) Any communication related directly to the imminent safety-of-life or property;

(b) Communications directly related and necessary to those activities which make the licensee eligible for the station license held under this part. In addition, when communication service is provided under the cooperative sharing provisions of § 90.179, the licensee providing such service may transmit communications related to the activities for which the parties receiving the service would be eligible to be licensed.

(c) Communications for testing purposes required for proper station and system maintenance. However, each licensee shall keep such tests to a minimum and shall employ every measure to avoid harmful interference.

§ 90.407 Communications permitted during emergency situations.

The licensee of any station authorized under this part may, during a period of emergency in which the normal communication facilities are disrupted as a result of hurricane, flood, earthquake, or similar disaster, utilize such station for emergency communication without regard to § 90.405, but in accordance with the following:

(a) As soon as possible after the beginning of such emergency use, notice is sent to the Commission in Washington, D.C., and to the Engineer in Charge of the Radio District in which the station is located, stating the nature of the emergency and the use to which the station is being put;

(b) The emergency use of the station be discontinued as soon as substantially normal communication facilities are again available, and the Commission in Washington, D.C., and the Engineer in Charge be notified immediately when such special use of the station is terminated: and

(c) The Commission may at any time order discontinuance of such special use of the authorized facilities.

§ 90.409 Emergency operation of Public Safety and Special Emergency mobile stations at fixed locations.

During an emergency requiring a local communication center, any mobile transmitter authorized in the Public Safety or Special Emergency Radio Services may be operated temporarily as a base station at a fixed location for a period not to exceed ten days. If operation for a longer period is required, such operation must be specifically authorized.

§ 90.411 Civil Defense Communications in the Public Safety and Special Emergency Radio Services.

The licensee of any radio station licensed in the Public Safety or Special Emergency Radio Services may, on a voluntary basis, transmit communications necessary for the implementation of civil defense activities assigned such station by local civil defense authorities during an actual or simulated emergency, including drills and tests. Such communications, however, must relate to the activity or activities which form the basis of the licensee's eligibility in the radio service in which he is authorized.

§ 90.413 Civil Defense Communications in the Taxicab Radio Service.

In addition to communications permitted by § 90.405, stations in the Taxicab Radio Service may be used for the transmission of the following:

(a) Messages relating to the dispatch of taxicabs which are temporarily diverted from their normal public passenger transportation activities to the performance of civil defense transportation functions.

(b) Messages relating to the activities of the civil defense agency in those cases where other communications facilities including the Radio Amateur Civil Emergency Service, Disaster, or Domestic Public Services are inoperative or inadequate, either in fact or during a simulated civil defense emergency: Provided, That:

(1) As soon as possible after the beginning of such use, the licensee shall send notice to the Commission in Washington, D.C., and to the Engineer in Charge of the Radio District in which the station is located, stating the nature of the communications being transmitted and the duration of the special use of the station. In addition, the Engineer in Charge shall be notified as soon as possible of any change in the nature of or termination of such use.

(2) In the event such use is to be a series of pre-planned tests or drills of the same or similar nature which are scheduled in advance for specific times or at certain intervals of time, the licensee may send a single notice to the Commission in Washington, D.C., and to the Engineer in Charge of the Radio District in which the station is located, stating the nature of the communications to be transmitted, the duration of each such test, and the times scheduled for such use. Notice shall likewise be given in the event of any change in the nature or termination of any such series of tests.

(3) The Commission may, at any time, order the discontinuance of such special use of the authorized facilities.

§ 90.415 Prohibited Uses.

Stations licensed under this part shall not:

(a) Transmit program material of any kind for use in connection with broadcasting; or

(b) Render a communications common carrier service, except for stations in the Special Emergency Radio Service providing communications standby facilities under § 90.49, or operational fixed stations licensed in the Railroad Radio Service handling public telegraph messages as agents of telegraph common carriers pursuant to § 90.91(b)(2).

§ 90.417 Interstation communication.

(a) Any station licensed under this part may communicate with any other station without restriction as to type, service, or licensee when the communications involved relate directly to the imminent safety-of-life or property.

(b) Any station licensed under this part may communicate with any other station licensed under this part, with U.S. Government stations, and with foreign stations, in connection with mutual activities, provided that where the communication involves foreign stations prior approval of the Commission must be obtained, and such communication must be permitted by the government that authorizes the foreign station. Communications by Police Radio Service stations with foreign stations will be approved only to be conducted in accordance with artice 5 of the Inter-American Radio Agreement, Washington, D.C., 1949, the provisions of which are set forth in § 90.19(c).

§ 90.419 Points of communication.

Normally, operations licensed under this part are intended to provide intrastation mobile communications. For example, a base station is intended to communicate with its associated mobile stations and mobile stations are intended to communicate between associated mobile stations and associated base stations of the licensee. Accordingly, operations between base stations at fixed locations are permitted only in the following situations:

(a) Base stations licensed in the Public Safety and Special Emergency Radio Services may communicate with other base stations, operational fixed stations, or fixed receivers authorized in these services on frequencies below 450 MHz only on a secondary basis.

(b) Base stations licensed on any frequency in the Industrial and Land Transportation Radio Services and on base station frequencies above 450 MHz in the Public Safety and Special Emer-

gency Services may communicate on a secondary basis with other base stations, operational fixed stations, or fixed receivers authorized in these services only when:

(1) The messages to be transmitted are of immediate importance to mobile stations; or

(2) Wireline communications facilities between such points are inoperative, economically impracticable, or unavailable from communications common carrier sources. Temporary unavailability due to a busy wireline circuit is not considered to be within the provisions of this subparagraph.

(c) Operational fixed stations may communicate with units of associated mobile stations only on a secondary basis.

(d) Operational fixed stations licensed in the Industrial and Land Transportation Radio Services may communicate on a secondary basis with associated base stations licensed in these services when:

(1) The messages to be transmitted are of immediate importance to mobile stations; or

(2) Wireline communications facilities between such points are inoperative, economically impracticable, or unavailable from communications common carrier sources. Temporary unavailability due to a busy wireline circuit is not considered to be within the provisions of this subparagraph.

§ 90.421 Operation of mobile units in vehicles not under the control of the licensee.

Mobile station transmitters may be installed in vehicles operated by persons other than the licensee as provided in the following paragraphs when necessary for the licensee to meet his requirements in connection with the activities for which he is licensed. The number of units so installed, together with units installed in vehicles operated by the licensee, must not exceed the number of mobile units authorized to the licensee. When an insufficient number of units is licensed to cover such additional units, the license must be modified to add a sufficient number of mobile units. The licensee is responsible for taking any necessary precaution to effectively eliminate the possibility of unauthorized operation of transmitters when not under the control of the licensee.

(a) Mobile units licensed in the Local Government Radio Service may be installed in any vehicle which in an emergency would require cooperation and coordination with the licensee, and in any vehicle used in the performance, under contract, of official activities of the licensee. This includes ambulances, emergency units of public utilities, lifeguard units, and vehicles of contractors or other persons or agencies performing for the licensee under contract one or more of its local government functions. This provision does not permit the installation of radio units in non-emergency vehicles not performing governmental functions under contract but with which the licensee might wish to communicate.

(b) Mobile units licensed in the Police Radio Services may be installed in any vehicle which in an emergency would require cooperation and coordination with the activities of the licensee. This includes emergency units of public utilities, lifeguard emergency units, ambulances, fire department vehicles and rural school buses.

(c) Mobile units licensed in the Fire Radio Service may be installed in emergency vehicles which may be alerted during a fire emergency. This includes emergency units of public utilities and water departments.

(d) Mobile units licensed in the Highway Maintenance Radio Service may be installed in vehicles of contractors or other persons having a direct responsibility for official highway activities.

(e) Mobile units licensed in the Forestry-Conservation Radio Services may be installed in vehicles of forestry cooperators, and persons having a direct responsibility in the prevention, detection, and suppression of forest fires.

(f) Mobile units licensed in the medical services category of the Special Emergency Radio Service may be installed in a vehicle or be hand-carried for use by any person with whom cooperation or coordination is required for medical services activities.

(g) Mobile units licensed in the Industrial Radio Services may be installed in vehicles of persons furnishing under contract to the licensee and for the duration of the contract, a facility or service directly related to the activities of the licensee.

(h) Mobile units licensed to an electric utility in the Power Radio Service on frequencies designated for use by an interconnected utility system may be installed in any vehicle operated by an organization or association comprised of interconnected electric utilities forming interconnections, power pools or groups.

(i) Mobile units authorized in the Automobile Emergency Radio Service may be installed in the vehicles of persons furnishing a private emergency road service to its members pursuant to a contract with the association.

§ 90.423 Operations on board aircraft.

(a) Except as provided in paragraphs (b), (c), and (d) of this section, and except as may be provided in other sections of this part with respect to operation on specific frequencies, mobile stations first authorized after September 14, 1973, under this part may be operated aboard aircraft for air-to-mobile, air-to-base, air-to-air and air-to-ship communications subject to the following:

(1) Operations are limited to aircraft that are regularly flown at altitudes below one mile (1.6 km) above the earth's surface;

(2) Transmitters are to operate with an output power not to exceed ten watts;

(3) Operations are secondary to land-based systems;

(4) Such other conditions, including additional reductions of altitude and power limitations, as may be required to minimize the interference potential to land-based systems.

(b) Exceptions to the altitude and power limitations set forth in paragraph (a) of this section may be authorized upon a showing of unusual operational requirements which justify departure from those standards, provided that the interference potential to regular land-based operations would not be increased.

(c) Mobile operations aboard aircraft in the services governed by this part, under licenses in effect September 14, 1973, may be continued without regard to provisions of paragraph (a) of this section, as follows:

(1) Operations may be continued only for the balance of the term of such licenses if aircraft involved are regularly flown at altitudes greater than one mile (1.6 km) above the earth's surface.

(2) Operations may be continued for one additional renewal license term if the aircraft involved are regularly flown at altitudes below one mile (1.6 km) above the earth's surface.

(d) Operation of radiolocation mobile stations may be authorized without regard to limitations and conditions set forth in paragraph (a), (b), and (c) of this section.

§ 90.425 Station identification.

Except as otherwise provided in this part, stations licensed under this part shall transmit identification as designated by this section.

(a) *Time of identification.* Each licensee shall transmit a station identification at the end of each transmission or exchange of transmissions, or once each 15 minutes (30 minutes in the Public Safety and Special Emergency Radio Services) of an operating period that has no substantial interruption. As an exception to this requirement, base and mobile stations licensed in the Railroad Radio Service may be identified at the beginning of each transmission or exchange of transmissions not exceeding three minutes.

(b) *Type of identification.* Unless otherwise provided, each station licensed under this part shall be identified by the transmission of the assigned call sign, given by voice (A3 or F3 emission) in plain language, in English. For fixed relay, vehicular repeater, and mobile relay stations, this identification requirement may be met by the transmission of the call sign of the associated controlling station. Other station identifiers that are arranged in a manner which cannot be confused with an assigned radio station call sign, may be employed as follows:

(1) In the Public Safety and Special Emergency Radio Services, mobile units operating above 30 MHz may employ an identifier in lieu of the assigned call sign that contains, at least, the name of the governmental subdivision under which the unit is licensed. The licensee must notify in writing the Engineer in Charge

of the district in which the unit operates of the specific identifiers used by the mobile units.

(2) In the Industrial Radio Services, mobile units communicating with a base station may transmit, once during each exchange of transmissions, any unit identifier, in lieu of the assigned call sign, which is on file in the station records of such base station, except that, when the base station transmits on a different frequency, the assigned call sign of either the mobile or the base station also must be transmitted.

(3) In the Land Transportation Radio Services, licensees may request the Commission's local Engineer-in-Charge to approve use of special mobile unit designations in lieu of the assigned call sign. This authority will not be granted where it appears that harmful interference to international operations may be caused by stations operating on frequencies below 50 MHz or by stations operating in areas within 50 miles of an international boundary; or, where it appears that the proposed method of identification will not adequately distinguish the mobile units of the applicant from the mobile units of other licensees in the area.

(4) In the Railroad Radio Service, stations may be identified by the name of the railroad and the train number, caboose number, engine number or name of fixed wayside station; or, if that is not practicable, by such other number or name as may be specified by the railroad concerned for the use of employees of the railroad to identify the fixed point or mobile unit. Where identification is made by other than a train number, caboose number or engine number, a list of such identification shall be maintained by the railroad. An abbreviated name or initial letters of the railroad may be used where such name or initial letters are in general usage. In those cases where it is shown that no difficulty would be encountered in identifying the transmissions of a particular station, as for example where stations of one licensee are located in a yard isolated from other radio installations, approval may be given to a request from the licensee for permission to omit the station identification.

(5) Nothing in this section shall be construed as prohibiting the transmission of station or unit identifiers, in addition to the assigned station call sign, which may be necessary for system operation.

(c) *Exception for mobile units in the public safety radio services.*

(1) When the station identification is regularly transmitted in 30 minute intervals, a single mobile unit in each general geographic area may be assigned responsibility for such identification. For the purposes of this paragraph, the term "each general geographic area" means an area not smaller than a single city or county and not larger than a single district administratively established for the service in which the radio system operates.

(2) A mobile station that operates on the transmitting frequency of the associated base station is not required to transmit any identification.

(d) *Special provisions for identification in the radiolocation service.*

(1) Stations in the Radiolocation Service operating on frequencies below 3400 kHz shall identify on each carrier frequency by transmission of the assigned call sign at the beginning and end of each period of operation. Such identification shall be by the Morse Code signals specified in the Telegraph Regulations annexed to the International Telecommunication Convention, Geneva, 1959, using A1 or A2 emission. For the latter emission, either the modulating audio frequency or modulated emission may be keyed.

(2) Stations in the Radiolocation Service operating on frequencies above 3400 kHz are not required to identify except upon specific instruction from the Commission.

(e) *Exemption for special uses.* A station which is transmitting for telemetering purposes or for the activation of devices which are employed solely as a means of attracting attention, or for remote control purposes, or which is retransmitting by self-actuating means a radio signal received from another radio station or stations, are exempted from any station identification requirements.

§ 90.427 Precautions against unauthorized operation.

Each transmitter shall be so installed and protected that it is not accessible to or capable of operation by persons other than those duly authorized by and under the control of the licensee. Provisions of this part authorizing certain unlicensed persons to operate stations, or authorizing unattended operation of stations in certain circumstances, shall not be construed to change or diminish in any respect the responsibility of station licensees to maintain control over the stations licensed to them (including all transmitter units thereof), or for the proper functioning and operation of those stations and transmitter units in accordance with the terms of the licenses of those stations.

§ 90.429 Control point and dispatch point requirements.

(a) *Control point required.* Unless permitted to be operated on an unattended basis, each station shall be provided with a control point;

(b) *Control point defined.* A control point is an operating position:

(1) Which must be under the control and supervision of the licensee;

(2) Where a person immediately responsible for the operation of the transmitter is stationed;

(3) Where the monitoring facilities required by this part are installed.

(c) *Control point location.* The location of the control point will be specified in the station license and will be assumed to be the same as that of the transmitting equipment unless an application for a different location has been approved by the Commission.

(d) *Control point facilities required.* At each control point, the following facilities shall be installed:

(1) A carrier operated device which will provide continuous visual indication when the transmiter is radiating, or, a pilot lamp or meter which will provide continuous visual indication when the transmitter circuits have been placed in a condition to produce radiation. The provisions of this subparagraph shall not apply to hand-carried transmitters or transmitters installed on motorcycles. The control point for a transmitter utilized to activate another radio station may employ a single pilot lamp or meter as an indication of the activation of local and remote transmitters.

(2) Equipment to permit the person responsible for the operation of the transmitter to monitor aurally all transmissions originating at dispatch points under his supervision;

(3) Facilities which will permit the person responsible for the operation of the transmitter either to disconnect the dispatch point circuits from the transmitter or to render the transmitter inoperative from any dispatch point under his supervision; and

(4) Facilities which will permit the person responsible for the operation of the transmitter to turn the transmitter carrier on and off at will.

(e) *Dispatch point.* A dispatch point is any position from which messages may be transmitted under the supervision of the person at a control point who is responsible for the operation of the transmitter. Dispatch points may be installed without authorization from the Commission.

§ 90.431 Unattended operation.

No person is required to be in attendance at a station when transmitting during normal rendition of service and when either:

(a) Transmitting for telemetering purposes, or;

(b) Retransmitting by self-actuating means a radio signal received from another radio station or stations

§ 90.433 Operator license requirements.

No operator license or permit is required for the operation of stations licensed under this part except as follows:

(a) *Maintenance and tests.* All transmitter adjustments or tests during the installation, servicing, or maintenance or a radio station which may affect the proper operation of such station shall be made by or under the immediate supervision and responsibility of a person holding a first-or-second-class commercial radio operator license, either radiotelephone or radiotelegraph, who shall be responsible for the proper functioning of the station equipment. Only persons holding a radiotelegraph first-or-second-class operator license shall perform such functions at radiotelegraph stations transmitting by any type of the Morse Code.

(b) *Operation during the course of normal rendition of radiotelegraph service.* Only a person holding a commercial radiotelegraph operator license of any class issued by the Commission shall operate a station when transmitting radiotelegraphy by any type of the Morse Code. Generally, only police zone and interzone stations will be transmitting radiotelegraphy.

§ 90.435 Posting of operator license.

Each person required to have an operator's license under this section shall post, or have immediately available at a place he is normally based or on duty, the original of his license, except that when he is performing duty at a station where he is not normally based, he shall have on his person a valid license identification card (FCC Form 785–F).

§ 90.437 Posting station licenses and transmitter identification cards or plates.

(a) The current original authorization for each station shall be retained as a permanent part of the station records but need not be posted.

(b) A clearly legible photocopy of the authorization for each base or fixed station at a fixed location shall be posted at every control point of the station.

(c) A Transmitter Identification Card (FCC Form 452–C) or a plate of metal or other durable substance, legibly indicating the call sign of the station, shall be affixed on each mobile station readily visible for inspection.

(d) If the transmitter is not in view of the operating position or is not readily accessible, then:

(1) A transmitter Identification Card or plate shall be affixed to the control equipment at the transmitter operating position or posted adjacent to it. The posting of the Transmitter Identification Card is not required for radio transmitters operated on railroad rolling stock.

(2) A Transmitter Identification Card or plate legibly indicating the call sign and the licensee's name and address shall be affixed, readily visible for inspection, to each transmitter operated at a fixed location.

§ 90.439 Inspection of stations.

All stations and records of stations in these services shall be made available for inspection at any reasonable time and any time while the station is in operation upon reasonable request of an authorized representative of the Commission.

§ 90.441 Inspection and maintenance of tower marking and associated control equipment.

(a) The licensee of any radio station with an antenna structure that must be painted or illuminated as specified in the station authorization is required to maintain the tower marking and associated control equipment in accordance with the following:

(1) The tower lights shall be checked at least once each 24 hours. Assurance that such lights are functioning properly shall be accomplished by visually observing either the tower lights or by observing an automatic indicator that registers any failure of such lights. Alternately, an automatic alarm system which detects any failure of the tower lights and indicates such failure to the licensee may be used but must be properly maintained.

(2) Any observed or otherwise known failure of a code or rotating beacon light or top light not corrected within 30 minutes, regardless of the cause of such failure, shall be reported immediately by telephone or telegraph to the nearest Flight Service Station or office of the Federal Aviation Administration. Further notification by telephone or telegraph shall be given immediately upon resumption of the required illumination.

(3) All automatic or mechanical control devices, indicators, and alarm systems associated with the tower lights shall be inspected at intervals not to exceed three months, to insure that such apparatus is functioning properly.

(4) All lighting shall be exhibited from sunset to sunrise unless otherwise specified in the instrument of station authorization.

(5) All towers shall be cleaned or repainted as often as is necessary to maintain good visibility.

(b) Licensees operating stations licensed under this part which share a tower used for antenna and/or antenna supporting purposes with other licensees under this part or under this chapter, may designate in writing one licensee to be responsible for maintenance and inspection of the tower, and maintenance of the inspection log. In such cases, a copy of the agreement must be filed with the Commission to be maintained in each participating licensee's station file. Each licensee remains individually responsible for meeting the inspection, maintenance and recordkeeping requirements.

§ 90.443 Content of station records.

Each licensee of a station in these services shall maintain records in accordance with the following:

(a) For all stations, the results and dates of the transmitting measurements required by § 90.215 of this part and the name of the person or persons making the measurements.

(b) When service or maintenance duties are performed on stations, the responsible operator shall sign and date an entry in the station record giving:

(1) Pertinent details of all duties performed by and under the supervision of the operator;

(2) The operator's name and address, and;

(3) The class, serial number and expiration date of the operator's license. Information stipulated in subparagraphs (2) and (3) of this paragraph need be entered only once in the station record at any station where the responsible operator is employed on a full time basis and an operator's license is properly posted.

(c) For stations whose antenna or antenna supporting structure must be illuminated, the licensee will record:

(1) The time the tower lights are turned on and off each day, if manually controlled.

(2) The time the daily check of proper operation of the tower lights was made, if an automatic alarm system is not provided.

(3) Any observed or otherwise known failure of a tower light by indicating:

(i) The nature of such failure.

(ii) The date and time the failure was observed or otherwise noted.

(iii) The date, time, and nature of adjustments, repairs or replacements made.

(iv) The identification of the Flight Service Station (Federal Aviation Administration) notified of the failure of any code or rotating beacon light not corrected within 30 minutes, and the date and time such notice was given.

(v) The date and time notice was given to the Flight Service Station of the Federal Aviation Administration that the required illumination was resumed.

(4) The completion of the 3-month periodic inspection required by § 90.441 of this part by indicating:

(i) The date of the inspection and the condition of all tower lights and associated tower lighting control devices, indicators and alarm systems.

(ii) Any adjustments, replacements, or repairs made to insure compliance with the lighting requirements and the date such adjustments, replacements or repairs were made.

§ 90.445 Form of station records.

(a) Station records shall be kept in an orderly manner, and in such detail that the data required are readily available. Key letters or abbreviations may be used if proper meaning or explanation is set forth in the record.

(b) Each entry in the records of each station shall be signed by a person qualified to do so, having actual knowledge of the facts to be recorded.

(c) No record or portion thereof shall be erased, obliterated, or wilfully destroyed within the required retention period. Any necessary correction may be made only by the person originating the entry, who shall strike out the erroneous portion, initial the correction made, and indicate the date of correction.

§ 90.447 Retention of station records.

Records required by this part shall be retained by the licensee for at least one year.

§ 90.449 Answers to a notice of violation.

Any licensee receiving official notice of a violation of the terms of the Communications Act of 1934, as amended, any legislative act or treaty to which the United States is a party, or the rules and regulations of the Federal Communications Commission, shall, within 10 days from such receipt or such other period as may be specified, send a written answer to the office of the Commission originating the original notice. If an answer

cannot be sent, or an acknowledgement made within such period, acknowledgement and answer shall be made at the earliest practicable date with a satisfactory explanation of the delay. The answer to each notice shall be complete in itself and shall not be abbreviated by reference to other communications or answers to other notices. The reply shall set forth the steps taken to prevent a recurrence of improper operation.

Subpart O—Chicago Land Mobile Spectrum Management

§ 90.481 Scope.

This subpart sets forth special provisions for the filing of applications for authority to operate new or modified radio facilities in the Chicago region and the Chicago land mobile spectrum management district.

§ 90.483 Chicago region.

The Chicago Region is defined to consist of the counties listed below:

ILLINOIS

1. Boone.
2. Bureau.
3. Carroll.
4. Champaign.
5. Christian.
6. Clark.
7. Coles.
8. Cook.
9. Cumberland.
10. De Kalb.
11. De Witt.
12. Douglas.
13. Du Page.
14. Edgar.
15. Ford.
16. Fulton.
17. Grundy.
18. Henry.
19. Iroquois.
20. Jo Daviess.
21. Kane.
22. Kankakee.
23. Kendall.
24. Knox.
25. Lake.
26. La Salle.
27. Lee.
28. Livingston.
29. Logan.
30. Macon.
31. Marshall.
32. Mason.
33. McHenry.
34. McLean.
35. Menard.
36. Mercer.
37. Moultrie.
38. Ogle.
39. Peoria.
40. Piatt.
41. Putnam.
42. Rock Island.
43. Sangamon.
44. Shelby.
45. Stark.
46. Stephenson.
47. Tazewell.
48. Vermilion.
49. Warren.
50. Whiteside.
51. Will.
52. Winnebago.
53. Woodford.

INDIANA

1. Adams.
2. Allen.
3. Benton.
4. Blackford.
5. Boone.
6. Carroll.
7. Cass.
8. Clay.
9. Clinton.
10. De Kalb.
11. Delaware.
12. Elkhart.
13. Fountain.
14. Fulton.
15. Grant.
16. Hamilton.
17. Hancock.
18. Hendricks.
19. Henry.
20. Howard.
21. Huntington.
22. Jasper.
23. Jay.
24. Kosciusko.
25. Lake.
26. Lagrange.
27. La Porte.
28. Madison.
29. Marion.
30. Marshall.
31. Miami.
32. Montgomery.
33. Morgan.
34. Newton.
35. Noble.
36. Owen.
37. Parke.
38. Porter.
39. Pulaski.
40. Putnam.
41. Randolph.
42. St. Joseph.
43. Starke.
44. Steuben.
45. Tippecanoe.
46. Tipton.
47. Vermillion.
48. Vigo.
49. Wabash.
50. Warren.
51. Wells.
52. White.
53. Whitley.

IOWA

1. Cedar.
2. Clinton.
3. Dubuque.
4. Jackson.
5. Jones.
6. Muscatine.
7. Scott.

MICHIGAN

1. Allegan.
2. Barry.
3. Berrien.
4. Branch.
5. Calhoun.
6. Cass.
7. Clinton.
8. Eaton.
9. Hillsdale.
10. Ingham.
11. Ionia.
12. Jackson.
13. Kalamazoo.
14. Kent.
15. Lake.
16. Mason.
17. Mecosta.
18. Montcalm.
19. Muskegon.
20. Newaygo.
21. Oceana.
22. Ottawa.
23. St. Joseph.
24. Van Buren.

OHIO

1. Defiance.
2. Mercer.
3. Paulding.
4. Van Wert.
5. Williams.

WISCONSIN

1. Adams.
2. Brown.
3. Calumet.
4. Columbia.
5. Dane.
6. Dodge.
7. Door.
8. Fond du Lac.
9. Grant.
10. Green.
11. Green Lake.
12. Iowa.
13. Jefferson.
14. Juneau.
15. Kenosha.
16. Kewaunee.
17. Lafayette.
18. Manitowoc.
19. Marquette.
20. Milwaukee.
21. Outagamie.
22. Ozaukee.
23. Racine.
24. Richland.
25. Rock.
26. Sauk.
27. Sheboygan.
28. Walworth.
29. Washington.
30. Waukesha.
31. Waupaca.
32. Waushara.
33. Winnebago.

§ 90.485 Applications.

Applicants for new base, mobile, or fixed stations on frequencies below 950 MHz (excluding applications in the Radiolocation Service) and located in the Chicago Region, as defined in section 90.483, and licensees proposing to modify, renew, or assign existing authorizations for such stations located in the Chicago Region shall submit Form 425.

§ 90.487 Special Provisions Relating to frequency assignments in the Chicago region.

(a) The table below reflects the basic frequency assignment methodology for use in the Chicago Region. Category I consists of the Police and Fire Radio Services and their present frequencies. Category II consists of other radio services and their frequencies:

CATEGORY I

Police Radio Service
Fire Radio Service

CATEGORY II

GROUP A

Forestry-Conservation Radio Service
Highway Maintenance Radio Service
Local Government Radio Service
Special Emergency Radio Service

GROUP B

Power Radio Service
Telephone Maintenance Radio Service
Railroad Radio Service

GROUP C

Petroleum Radio Service
Forest Products Radio Service
Manufacturers Radio Service
Relay Press Radio Service
Motion Picture Radio Service
Automobile Emergency Radio Service
Business Radio Service
Taxicab Radio Service
Motor Carrier Radio Service
Special Industrial Radio Service

(b) Frequencies in Category I are available only to those who establish eligibility in that Category. Frequencies in Category II are available to all persons who establish eligibility in Category II; and are also available to Category I eligibles on a secondary basis.

(c) To the extent practicable, frequencies from the service within which an applicant has established eligibility will be assigned to that applicant. If no suitable frequency is available, then a search will be made of frequencies of other services in the same group as the applicant. Access to the frequencies of a different group will be permitted only on a case-by-case basis and only when no suitable frequency is available in the group in which eligibility is established.

(d) Where services which presently share frequencies are in different categories or groups, the shared frequencies will only be available to the lower priority category or group; except for the eleven low band frequencies shared by police and local government which go to Category I. Licensees who presently operate on these frequencies may continue to do so even though the frequencies do not appear in their eligibility pool.

(e) The eligibility, permissible communications, points of communications, technical requirements and assignment limitations reflected in the various subparts of this part will also govern in the Chicago Region. Station limitations for the service in which licensee eligibility is established will govern the use of a station even though the frequency assigned may not be from the service in which eligibility was established; except in the case of mobile relay stations which will only be permitted on frequencies previously available for mobile relay use.

(f) Frequency coordination procedures of Section 90.175 are required in the Chicago region after August 31, 1977.

NOTE.—The above frequency assignment methodology for inter-service sharing will not be implemented until further notice by the Commission.

Subpart P—Developmental Operation

§ 90.501 Scope.

This subpart contains the procedures and requirements for the filing of applications for developmental licenses. It includes special requirements related to developmental operation, restrictions on operations, and special reports required when the development operation is to seek operational data or techniques directed toward the extension of that service.

§ 90.503 Eligibility.

Those persons who are eligible to operate stations in services under this part on a regular basis are also eligible

to obtain an authorization for developmental operation in those particular radio services.

§ 90.505 Showing required.

(a) Except as provided in paragraph (b) of this section, each application for developmental operation shall be accompanied by a showing that:

(1) The applicant has an organized plan of development leading to a specific objective;

(2) The actual transmission by radio is essential to proceed beyond the present stage of the program;

(3) The program has reasonable promise of substantial contribution to the expansion or extension of the radio art, or is investigating new unexplored concepts in radio transmission and communications;

(4) The program will be conducted by qualified personnel;

(5) The applicant is legally and financially qualified, and possesses adequate technical facilities to conduct the proposed program; and

(6) The public interest, convenience, and necessity will be served by the proposed operation.

(b) The provisions of paragraph (a) of this section do not apply when an application is made for developmental operation solely for the reason that the frequency requested is restricted to such developmental use.

§ 90.507 Limitations on use.

Stations used for developmental operation shall conform to all technical and operating requirements of Subparts I and N of this part, unless specifically exempted in the instrument of authorization.

§ 90.509 Frequencies available for assignment.

Stations engaged in developmental operation may be authorized to use a frequency or frequencies available in the service in which they propose to operate. The number of channels assigned will depend upon the specific requirements of the developmental program and the number of frequencies available in the particular geographical area where the station is to operate.

§ 90.511 Interference.

The operation of any station engaged in developmental work shall not cause harmful interference to the operation of stations regularly licensed under any part of the Commission's rules.

§ 90.513 Special provisions.

(a) The developmental program as described by the application for authorization shall be followed unless the Commission shall otherwise direct.

(b) Where some phases of the developmental program are not covered by the general rules in this chapter and the rules in this part, the Commission may specify additional requirements or conditions as deemed necessary in the public interest, convenience, or necessity.

(c) The Commission may, from time to time, require a station engaged in developmental work to conduct special tests which are reasonable and desirable to the authorized developmental program.

§ 90.515 Change or cancellation of authorization without hearing.

Every application for authority to engage in developmental operation shall be accompanied by a statement signed by the applicant in which it is agreed that any authorization issued pursuant thereto will be accepted with the express understanding of the applicant that it is subject to change in any of its terms or to cancellation in its entirety at any time, upon reasonable notice but without a hearing, if, in the opinion of the Commission, circumstances should so require.

§ 90.517 Report of operation.

A report on the results of a developmental program shall be filed with and made a part of each application for renewal of authorization. In cases where no renewal is requested, such report shall be filed within 60 days of the expiration of such authorization. Matters which the applicant does not wish to disclose publicly may be so labeled; they will be used solely for the Commission's information, and will not be publicly disclosed without permission of the applicant. The report shall include comprehensive and detailed information on:

(a) The final objective.

(b) Results of operation to date.

(c) Analysis of the results obtained.

(d) Copies of any published reports.

(e) Need for continuation of the program.

(f) Number of hours of operation on each frequency.

This report is not required if the sole reason for the developmental authorization is that the frequency of operation is restricted to developmental use only.

Subpart Q—Emergency Communications Pursuant to the Industrial Communications Emergency Plan (ICEP) and the Land Transportation Industries Communications Emergency Plan (LATICEP)

§ 90.525 Industrial Communications Emergency Plan (ICEP).

(a) *Scope and objectives.* This section contains the rules and regulations providing for emergency operations for all Industrial Radio Service Licensees of the Federal Communications Commission, and an Industrial Communications Emergency Plan (ICEP) prepared pursuant to and by the authority of Sections 1, 4(i), 301, 303, 307, 308, 309, 312, 316, 318, 319 and 606 of the Communications Act of 1934 as amended, and Executive Order 11490, as amended. The objective of this subpart is to provide for the development of detailed communications plans containing the designation of facilities, mutually compatible operational arrangements, procedures, and interconnecting facilities, for the continued operation of industrial radio stations on a voluntary, organized basis during times of war, grave national crisis, or other National, State or Operational (Local) emergency situations.

(b) *Industrial communications emergency plan (ICEP) defined.* The Industrial Communications Emergency Plan (ICEP) is a plan containing procedures for the development of detailed communications plans of Industrial Radio Service licensees based on essential communications requirements of industry, including communications with interested Government Agencies during emergencies on a National, State, or Operational (Local) Area level.

(c) *Emergency situation.* An emergency situation is a situation posing a threat to the safety of life and/or property on a National, State, or Operational (Local) level.

(d) *Activation and termination.* In an emergency situation communications elements of the ICEP may be activated and terminated by competent authorities as defined in the Detailed Operational ICEPs.

(e) *National, State and local emergency operation.* Detailed data, information and instructions for emergency operation of mutually compatible facilities, systems and arrangements will be set forth in the Detailed Operational ICEPs which are considered a supplement to the ICEP.

(f) *Participation of class A citizens radio service licensees.* Industrial entities may utilize their Citizens Radio Service Class A facilities, licensed to them under Section 95.41(a) of the Commission's Rules, in the operation of their own Detailed Operational Industrial Communications Emergency Plans as developed in accordance with the procedures established in this subpart.

(g) *Emergency Communications Authorization (ECA).* (1) A radio station licensee in any industry covered by the Industrial Communications Emergency Plan (ICEP) may be granted an Emergency Communications Authorization (ECA) by the Federal Communications Commission. Each ECA shall remain in effect concurrently with the terms of the approved Detailed Operational Industrial Communications Emergency Plans provided:

(2) The licensee functioning within the terms of the ECA has demonstrated his willingness to cooperate with others by agreeing to provide service or interconnection as part of a communication emergency plan.

(3) The licensee is included in an FCC approved intra-company plan to utilize its radio facilities as emergency backup for other communications services used by the licensee.

(4) An ECA will be issued to each industrial entity for each communications system plan approved by the Commission.

(5) Any industrial radio service participating in the ICEP may withdraw from participation by giving thirty (30) days'

written notice and by submitting his Emergency Communications Authorization (ECA) to the Federal Communications Commission for cancellation.

(h) *Tests of approved interconnecting systems and facilities.* After detailed emergency communication systems plans are completed, or segments of the system are completed, system operational tests may be necessary. When deemed necessary, these tests shall be conducted as specified in the approved operational plans. Results of these tests shall be furnished to the FCC Engineer in Charge (EIC), the Chief, Emergency Communications Division of the FCC, and to others concerned. These tests would be used as training exercises for personnel at all levels.

§ 90.527 Land Transportation Industries Communications Emergency Plan (LATICEP).

(a) *Scope and objective.* This section applies to those stations licensed under this part and operating in a system for which a National Defense Emergency Authorization has been issued. The section provides for operation of stations within the United States during a grave national crisis or war. The objective is to provide for flexible operation of communications equipment during such an emergency to fulfill emergency communication requirements and needs.

(b) *Definition of terms.* (1) National Defense Emergency Authorization (NDEA). A National Defense Emergency Authorization is an authorization issued by the Federal Communications Commission to the licenses of land transportation stations, subject to the provisions of this part, for operation in accordance with the Interim Basic Land Transportation Industries Communications Emergency Plan (LATICEP) including the annexes and supplements to that plan.

(2) *Emergency action notification.* The Emergency Action Notification is the notice (with or without an Attack Warning) to all licensees and regulated services of the Federal Communications Commission and to the general public of the existence of an Emergency Action Condition. The Emergency Action Notification is released upon direction of the President of the United States and is disseminated only via the Emergency Action Notification System.

(3) *Emergency action condition.* The Emergency Action Condition is the period of time between the transmission of an Emergency Action Notification and the transmission of the Emergency Action Condition Termination.

(4) *Emergency action notification system.* The Emergency Action Notification System is the system by which all licensees and regulated services of the Federal Communications Commission, and the general public, are notified (with or without an Attack Warning) of the existence of an Emergency Action Condition resulting from a grave national crisis or war. The Emergency Action Notification System consists only of the following approved facilities, systems, and arrangements:

(i) *First method.* From the President of the United States via the White House Communications Agency to the Associated Press (AP) and United Press International (UPI); thence via automatic selective switching and teletype Emergency Action Notification to all standard, FM, and television broadcast and other stations (including Land Transportation stations) subscribing to the AP and UPI Radio Wire Teletype Networks.

(ii) *Second method.* From the President of the United States via the White House Communications Agency to specified control points of the nationwide commercial Radio and Television Broadcast Networks, the American Telephone and Telegraph Co. and other specified points via a dedicated teletypewriter network; thence to all affiliates via any available commercial Radio and Television internal network alerting facilities.

(iii) *Third method.* Off-the-air monitoring of a standard, FM, or television broadcast station by other standard, FM, and television broadcast stations and FCC licensees (including Land Transportation licensees) for receipt of the Emergency Action Notification. All broadcast station licensees are required to install, maintain, and operate radio receiving equipment for receipt of the Emergency Action Notification at this level.

(iv) *Fourth method.* Off-the-air monitoring of standard, FM, and TV broadcast stations by the general public who are listening or viewing or whose receivers can be activated by standardized selective signaling transmitted by said stations.

(5) *Emergency action condition termination.* The Emergency Action Condition Termination is the notice to all licensees and regulated services of the Federal Commission and to the general public of the termination of an Emergency Action Condition. The Emergency Action Condition Termination is released upon direction of the President of the United States and is disseminated only via the Emergency Action Notification System.

(c) *Emergency operation.* (1) A National Defense Emergency Authorization will be issued on a system basis by the Commission to those licensees who are engaged in essential activities for which an approved National Industry Advisory Committee Emergency Plan has been adopted, provided, the licensee has submitted to the Commission a certification of willingness to participate in and conform to the emergency communications plan applicable to his stations licensed under this part for which coverage is desired, has certified thereon a willingness to interconnect facilities where necessary with those of similar licensees and to cooperate with such licensees in providing emergency communications. Once issued, a National Defense Emergency Authorization is effective for each station in the system concurrently with the regular license for that station. A National Defense Emergency Authorization may be terminated by the Commission upon a finding that, for any reason, the facilities are no longer capable of providing effective emergency communications in accordance with the National Industry Advisory Committee Emergency Plan concerned.

(2) Over and above the permissive provisions of all applicable rules and notwithstanding any provisions of this chapter or license restrictions to the contrary, systems covered by a National Defense Emergency Authorization and operated by licensees participating in the Land Transportation Industries Communications Emergency Plan (LATICEP) are authorized to operate in accordance with the provisions of this paragraph under the emergency conditions and for the periods of time specified above:

(i) To share facilities with, or interconnect with, any other communications facilities necessary to accomplish transportation industry's communications requirements where such sharing and/or interconnection is mutually acceptable.

(ii) To use mobile frequencies to provide point-to-point services and to effect tie-ins between established fixed services.

(iii) To use any type of modulation, including multiplex, so long as the occupied bandwidth does not exceed that normally authorized on the frequency involved, and to use any operating power not exceeding the maximum specified under Part 93, subject to mutual resolution of any resulting interference.

(iv) To test periodically any facility established for emergency use under this section.

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Frequency	Services	Special limitations
Kilohertz		
70–90	IR	Radiolocation.
90–110	IR	Do.
110–130	IR	Do.
1605–1715	IR	Do.
1610	PP	
1614	IP	Geophysical.
1618	PP	
1620	PP	
1628	IM, IP	Do.
1630	PF	
1634	PP	
1642	PP	
1650	PP	
1652	IM, IP	Do.
1658	PP	
1666	PP	
1674	PP	
1676	IP, IF	Do.
1682	PP	
1690	PP	
1698	PP	
1700	IP, IF	Do.
1706	PP	
1714	PP	
1715–1750	IR	Radiolocation.
1722	PP	
1730	PP	
1750–1800	IR	Do.
2000–3000	PS	Communication with public coast.
2212	PO	
2226	PO	
2236	PO	
2244	PO	
2292	IW, IP, IM, IS	
2326	PP	
2366	PP	
2382	PP	
2390	PP	
2398	IW, IP, IF, IM, IS	
2406	PP	
2414	PP	
2422	PP	
2430	PP	
2442	PP	
2450	PP	
2458	PP	
2466	PP	
2474	PP	
2482	PP	
2490	PP	
2505–3500	PS	State guard.
2726	PS	Do.
2804	PP	Zone, interzone.
2808	PP	Do.
2812	PP	Do.
3201	PS	
3230–3400	IR	Radiolocation.
4383.6	(1)	Alaska emergency frequency.
4637.5	IW, IP, IM, IS	
5135	PP	Zone, interzone.
5140	PP	Do.
5195	PP	Do.
7480	PP	Do.
7805	PP	Do.
7955	PP	Do.
Megahertz		
25.02	IP	Geophysical.
25.04	IP	Oil spill.
25.06	IP	Geophysical.
25.08	IP	Oil spill.
25.10	IP	Geophysical.
25.12	IP	
25.14	IP	
25.16	IP	
25.18	IP	
25.20	IP	
25.22	IP	
25.24	IP	
25.26	IP	
25.28	IP	
25.30	IP	
25.32	IP	
27.43	IB	
27.45	IB	
27.49	IR	Itinerant.
27.51	IB	Low power (2 W).
27.53	IB	Do.
29.71	IF	
29.73	IF	
29.75	IF	
29.77	IF	
29.79	IF	
30.565	....	Developmental.

Frequency	Services	Special limitations
Megahertz		
30.58	IB	
30.62	IB	
30.64	IB	
30.66	IP, LM	
30.68	IF	
30.70	IP	
30.72	IF	
30.74	IP, LM	
30.76	IB	
30.78	IP	
30.80	IB	
30.82	IP, LM	
30.84	IB	Low power (2 W).
30.90	PO, LM	
30.88	IB	
30.90	PO, LM	
30.92	IB	
30.94	PO, LM	
30.96	IB	
30.98	PO, LM	
31.00	IB	
31.02	PO, LM	
31.04	IB	
31.06	PO, LM	
31.08	LM	
31.10	PO, LM	
31.12	LM	
31.14	PO, LM	
31.16	IB	
31.18	PO	State use.
31.20	IB	
31.22	PO	Do.
31.24	IB	
31.26	PO	Do.
31.28	IS	
31.30	PO	Do.
31.32	IS	
31.34	PO	Do.
31.36	IS	
31.38	PO	Do.
31.40	IS	
31.42	PO	Do.
31.44	IS	
31.46	PO	Do.
31.48	IS	
31.50	PO	Do.
31.52	IS	
31.54	PO	Do.
31.56	IS	
31.58	PO	Do.
31.60	IS	
31.62	PO	Do.
31.64	IS	Do.
31.66	PO	Do.
31.68	IS	
31.70	PO	Do.
31.72	IS	
31.74	PO	Do.
31.76	IS	
31.78	PO	Do.
31.80	IS	
31.82	PO	Do.
31.84	IS	
31.86	PO	Do.
31.88	IS	
31.90	PO	Do.
31.92	IS	
31.94	PO	Do.
31.96	IS	
31.98	PO	Do.
31.99–32.0	PL, PP, PF, PH, PO, PS	Developmental.
33.0–33.1	PL, PP, PF, PH, PO, PS	Do.
33.02	PH, PS	
33.04	PS	
33.06	PH, PS	
33.08	PS	
33.10	PH, PS	
33.12	IS	Low power (2 W).
33.14	IB	Do.
33.16	IB	Maximum power (100 W).
33.18	IP	
33.20	IP	
33.22	IP	
33.24	IP	
33.26	IP	
33.28	IP	
33.30	IP	
33.32	IP	
33.34	IP	
33.36	IP	
33.38	IP	
33.40	IB	Low power (½ W).
33.42	PF	Low power (10 W).
33.44	PF	

Frequency	Services	Special limitations
Megahertz		
33.46	PF	Mobile only.
33.48	PF	
33.50	PF	Do.
33.52	PF	
33.54	PF	Do.
33.56	PF	
33.58	PF	Do.
33.60	PF	
33.62	PF	Do.
33.64	PF	
33.66	PF	Do.
33.68	PF	
33.70	PF	
33.72	PF	
33.74	PF	
33.76	PF	
33.78	PF	
33.80	PF	
33.82	PF	
33.84	PF	
33.86	PF	
33.88	PF	
33.90	PF	
33.92	PF	
33.94	PF	
33.96	PF	
33.98	PF	
33.99–34.0	PL, PP, PF, PH, PO, PS	Developmental.
34.0–35.01		Do.
35.02	IB	Low power (2 W).
35.04	IB	Itinerant.
35.06	IB	Maximum power (110 W).
35.08	IB	Do.
35.10	IB	Do.
35.12	IB	Do.
35.14	IB	Do.
35.16	IT	Wireline common carrier.
35.18	IB	Maximum power (110 W).
35.20	IS	
35.32	IS	
35.36	IS	
35.40	IS	
35.44	IS	
35.48	IS	
35.52	IS	
35.64	PS	Paging only.
35.68	PS	Do.
35.70	IB	
35.72	IB	
35.74	IS	
35.76	IS	
35.78	IS	
35.80	IS	
35.82	IS	
35.84	IS	
35.86	IS	
35.88	IB	Maximum power (110 W).
35.90	IB	Do.
35.92	IB	Do.
35.94	IB	
35.96	IB	
35.98	IB	
35.99–36.0		Developmental.
37.0–37.01		Do.
37.02	PP	Mobile only.
37.04	PP	
37.06	PP	
37.08	PP	
37.10	PL, PP	
37.12	PP	
37.14	PP	
37.16	PP	
37.18	PL, PP	
37.20	PP	
37.22	PF	
37.24	PP	
37.26	PL, PP	
37.28	PP	
37.30	PP	
37.32	PP	
37.34	PP	
37.36	PP	
37.38	PP	
37.40	PP	
37.42	PP	
37.44	IF	
37.46	IW	
37.48	IW	
37.50	IW	
37.52	IW	
37.54	IW	
37.56	IW	
37.58	IW	
37.60	IW	Interconnected utility systems.
37.62	IW	
37.64	IW	
37.66	IW	
37.68	IW	

Frequency	Services	Special limitations
Megahertz		
37.70	IW	
37.72	IW	
37.74	IW	
37.76	IW	
37.78	IW	
37.80	IW	
37.82	IW	
37.84	IW	Do.
37.86	IW	
37.88	IF	
37.90	PH, PS	
37.92	PH	
37.94	PH, PS	
37.96	PH	
37.98	PH, PS	
37.99–38.0	PL, PP, PF, PH, PO, PS	Developmental.
38.0–39.01	PL, PP, PF, PH, PO, PS	Do.
39.02	PP	
39.04	PP	
39.06	PL, PP	Low power (2 W).
39.08	PP	
39.10	PL, PP	
39.12	PP	
39.14	PP	
39.15	PP	
39.18	PL, PP	
39.20	PP	
39.22	PP	
39.24	PP	
39.26	PP	Mobile only.
39.28	PP	
39.30	PP	Do.
39.32	PP	
39.34	PP	Do.
39.36	PP	
39.38	PP	Do.
39.40	PP	
39.42	PP	
39.44	PP	
39.46	PP	
39.48	PP	Intersystems operation.
39.50	PL, PP	
39.52	PP	
39.54	PP	
39.56	PP	
39.58	PL, PP	
39.60	PP	
39.62	PP	
39.64	PP	
39.66	PP	Mobile only.
39.68	PP	
39.70	PP	Do.
39.72	PP	
39.74	PP	Do
39.76	PP	
39.78	PP	Mobile.
39.80	PP	
39.82	PP, PP	
39.84	PP	
39.86	PP	
39.88	PP	
39.90	PL, PP	
39.92	PP	
39.94	PP	
39.96	PP	
39.98	PL, PP	
39.99–40.0	PL, PP, PF, PH, PO, PS	Developmental.
42.0–42.01	PL, PP, PF, PH, PO, PS	Do.
42.02	PP	State police.
42.04	PP	Do.
42.06	PP	Do.
42.08	PP	Do.
42.10	PP	Do.
42.12	PP	Do.
42.14	PP	Do.
42.16	PP	Do.
42.18	PP	Do.
42.20	PP	State police (mobile).
42.22	PP	Do.
42.24	PP	Do.
42.26	PP	Do.
42.28	PP	Do.
42.30	PP	Do.
42.32	PP	Do.
42.34	PP	Do.
42.36	PP	State police.
42.38	PP	Do.
42.40	PP	Do.
42.42	PP	Do.
42.44	PP	Do.
42.46	PP	Do.
42.48	PP	Do.
42.50	PP	Do.
42.52	PP	Do.
42.54	PP	Do.
42.56	PP	Do.
42.58	PP	Do.
42.60	PP	Do.
42.62	PP	Do.

Frequency	Services	Special limitations
Megahertz		
42.64	PP	Do.
42.66	PP	State police (mobile).
42.68	PP	Do.
42.70	PP	Do.
42.72	PP	Do.
42.74	PP	Do.
42.76	PP	Do.
42.78	PP	Do.
42.80	PP	State police.
42.82	PP	Do.
42.84	PP	Do.
42.86	PP	Do.
42.88	PP	Do.
42.90	PP	Do.
42.92	PP	Do.
42.94	PP	Do.
42.96	IB	Maximum power (100 W).
42.98	IB	Low power (2 W).
43.00	IB	Maximum power (110 W).
43.02	IS	
43.04	IS	Itinerant.
43.06	IS	
43.08	IS	
43.10	IS	
43.12	IS	
43.14	IS	
43.16	IT	
43.18	IS	
43.28	IM	
43.32	IS	
43.36	IS	
43.40	IS	
43.44	IS	
43.48	IS	
43.52	IS	
43.64	PS	1-way paging.
43.68	PS	Do.
43.70	LM	Operation between urban areas.
43.72	LM	Do.
43.74	LM	Do.
43.76	LM	Do.
43.78	LM	Do.
43.80	LM	Do.
43.82	LM	Do.
43.84	LM	Do.
43.86	LM	Do.
43.88	LM	Do.
43.90	LM	Do.
43.92	LM	Do.
43.94	LM	Do.
43.96	LM	Do.
43.98	LM	Do.
44.00	LM	Do.
44.02	LM	Do.
44.04	LM	For operation between urban areas.
44.06	LM	Do.
44.08	LM	Do.
44.10	LM	Do.
44.12	LM	Do.
44.14	LM	Do.
44.16	LM	Do.
44.18	LM	Do.
44.20	LM	Do.
44.24	LM	Do.
44.26	LM	Do.
44.28	LM	Do.
44.30	LM	Do.
44.32	LM	Do.
44.34	LM	Do.
44.36	LM	Do.
44.38	LM	Do.
44.40	LM	Do.
44.42	LM	Do.
44.44	LM	Do.
44.46	LM	Operation within an urban area.
44.48	LM	Do.
44.50	LM	Do.
44.52	LM	Do.
44.54	LM	Do.
44.56	LM	Do.
44.58	LM	Do.
44.60	LM	Do.
44.62	PP	State police.
44.64	PO	
44.66	PP	Do.
44.68	PO	
44.70	PP	Do.
44.72	PO	
44.74	PP	Do.
44.76	PO	
44.78	PP	State police (mobile only).
44.80	PO	
44.82	PP	Do.
44.84	PO	
44.86	PP	Do.
44.88	PO	
44.90	PP	Do.
44.92	PO	

Frequency	Services	Special limitations
Megahertz		
44.94	PP	State police.
44.96	PO	
44.98	PP	Do.
45.00	PO	
45.02	PP	Do.
45.04	PO	
45.06	PP	Do.
45.08	PL	
45.10	PP	
45.12	PL	
45.14	PP	
45.16	PL	
45.18	PP	
45.20	PL	
45.22	PP	
45.24	PL	
45.26	PP	Mobile.
45.28	PL	
45.30	PP	Do.
45.32	PL	
45.34	PP	Do.
45.36	PL	
45.38	PP	Do.
45.40	PL	
45.42	PP	
45.44	PL	
45.46	PP	
45.48	PL	
45.50	PP	
45.52	PL	
45.54	PP	
45.56	PL	
45.58	PP	
45.60	PL	
45.62	PP	
45.64	PL	
45.66	PP	
45.68	PH	
45.70	PP	
45.72	PH	
45.74	PP	Do.
45.76	PH	
45.78	PP	Do.
45.80	PH	
45.82	PP	Do.
45.84	PH	
45.86	PP	Intersystem operation.
45.88	PF	Do.
45.90	PP	
45.92	PH	
45.94	PP	
45.96	PS	
45.98	PP	
46.00	PH	
46.02	PP	
46.04	PS	
46.06	PF	
46.08	PF	
46.10	PF	
46.12	PF	
46.14	PF	
46.16	PF	
46.18	PF	
46.20	PF	
46.22	PF	Mobile.
46.24	PF	Do.
46.26	PF	Do.
46.28	PF	Do.
46.30	PF	Maximum power 10 W.
46.32	PF	Mobile.
46.34	PF	Do.
46.36	PF	
46.38	PF	
46.40	PF	
46.42	PF	
46.44	PF	
46.46	PF	
46.48	PF	
46.50	PF	
46.52	PL	
46.54	PL	
46.56	PL	
46.58	P	
47.02	PH	State use.
47.04	PH	Do.
47.06	PH	Do.
47.08	PH	Do.
47.10	PH	Do.
47.12	PH	Do.
47.14	PH	Do.
47.16	PH	Do.
47.18	PH	Do.
47.20	PH	Do.
47.12	PH	Do.
47.14	PH	Do.
47.16	PH	Do.
47.18	PH	Do.
47.20	PH	Do.
47.22	PH	Do.
47.24	PH	Do.
47.26	PH	Do.
47.28	PH	Do.
47.30	PH	Do.
47.32	PH	Do.
47.36	PH	Do.
47.38	PH	Do.
47.40	PH	Do.
47.42	PS	Disaster relief.
47.44	IS	
47.46	PS	
47.48	IS	
47.50	PS	
47.52	IS	
47.54	PS	
47.56	IS	
47.58	PS	
47.60	IS	
47.62	PS	
47.64	IS	
47.66	PS	
47.68	IS	
47.70	IW	
47.72	IW	
47.74	IW	
47.76	IW	
47.78	IW	
47.80	IW	
47.82	IW	
47.84	IW	
47.86	IW	
47.88	IW	
47.90	IW	
47.92	IW	
47.94	IW	
47.96	IW	
47.98	IW	
48.00	IW	
48.02	IW	
48.04	IW	
48.06	IW	
48.08	IW	
48.10	IW	
48.12	IW	
48.14	IW	
48.16	IW	
48.18	IW	
48.20	IW	
48.22	IW	
48.24	IW	
48.26	IW	
48.28	IW	
48.30	IW	
48.32	IW	
48.34	IW	
48.36	IW	
48.38	IW	
48.40	IW	
48.42	IW	
48.44	IW	
48.46	IW	
48.48	IW	
48.50	IW	
48.52	IW	
48.54	IW	
48.56	IP, IF	
48.58	IP, IF	
48.60	IP, IF	
48.62	IP, IF	
48.64	IP, IF	
48.66	IP, IF	
48.68	IP, IF	
48.70	IP, IF	
48.72	IP, IF	
48.74	IP, IF	
48.76	IP, IF	
48.78	IP, IF	
48.80	IP, IF	
48.82	IP, IF	
48.84	IP, IF	
48.86	IP, IF	
48.88	IP, IF	
48.90	IP, IF	
48.92	IP, IF	
48.94	IP, IF	
48.96	IP, IF	
48.98	IP, IF	
49.00	IP, IF	
49.02	IP, IF	
49.04	IP, IF	
49.06	IP, IF	
49.08	IP, IF	
49.10	IP, IF	
49.12	IP, IF	
49.14	IP, IF	
49.16	IP, IF	
49.18	IP, IF	
49.20	IP, IF	
49.22	IP, IF	
49.24	IP, IF	
49.26	IP, IF	
49.28	IP, IF	
49.30	IP, IF	
49.32	IP, IF	
49.34	IP, IF	
49.36	IP, IF	
49.38	IP, IF	
49.40	IP, IF	
49.42	IP, IF	
49.44	IP, IF	
49.46	IP, IF	
49.48	IP, IF	
49.50	IP, IF	
49.52	IS	
49.54	IF, IS	
49.56	IS	
49.58	IF, IS	
72.0–76.0	PL, PP, PF, PH, PO, PS, IW, IP IF, IM, IY, IS, IB, IX, LM, LR	Fixed, noninterference with TV channels 4 and 5.
150.815	IB, LA	IB use limited to Puerto Rico and Virgin Islands.
150.830	LA	
150.845	IB, LA	Do.
150.860	LA	
150.875	IB, LA	Do.
150.890	LA	
150.905	IB, LA	Do.
150.920	LA	
150.935	IB, LA	Do.
150.950	LA	
150.965	IB, LA	Do.
150.980	IP	Oil spill.
150.995	PH, IB	Do.
151.010	PH	
151.025	PH, IB	Do.
151.040	PH	
151.055	PH, IB	Do.
151.070	PH	
151.085	PH, IB	Do.
151.100	PH	
151.115	PH, IB	Do.
151.130	PH	
151.145	PO, IB	Do.
151.160	PO	
151.175	PO, IB	Do.
151.190	PO	
151.205	PO, IB	Do.
151.220	PO	
151.235	PO, IB	Do.
151.250	PO	
151.265	PO, IB	Do.
151.280	PO	
151.295	PO, IB	Do.
151.310	PO	
151.325	PO, IB	Do.
151.340	PO	
151.355	PO, IB	Do.
151.370	PO	
151.385	PO, IB	Do.
151.400	PO	
151.415	PO, IB	Do.
151.430	PO	
151.445	PO, IB	Do.
151.460	PO	
151.475	PO, IB	Do.
151.490	PO, IS	
151.505	IS	Itinerant use.
151.520	IM	
151.535	IS	
151.550	IS	
151.565	IS	
151.580	IS	
151.595	IS	
151.625	IB	Do.
151.655	IB	Maximum power 110 W.
151.685	IB	Do.
151.715	IB	Do.
151.745	IB	Do.
151.775	IB	Do.
151.805	IB	Do.
151.835	IB	Do.
151.865	IB	Do.
151.895	IB	Do.
151.925	IB	
151.955	IB	
151.985	IT	Communications common carrier.
152.0075	PS	1-way paging.
152.270	LX	
152.285	LX	For use within SMA's over 50,000.
152.300	IB, LX	For LX use within SMA's over 50 000
152.315	LX	For use within SMA's over 50,000.
152.330	LX	
152.345	LX	Do.
152.360	IB, LX	For LX use within SMA's over 50,000.
152.375	LX	For use within SMA's over 50,000.
152.390	LX	Do.
152.405	LX	Do.
152.420	IB, LX	For LX use within SMA's over 50,000.
152.435	LX	For use within SMA's over 50,000.
152.450	LX	
152.465	IF, IS, LX	
152.480	IF, IS, IB	IB 1-way paging.
152.870	IM, IS	

Frequency	Services	Special limitations
Megahertz		
152.885	IS	
152.900	IM, IS	
152.915	IS	
152.930	IM, IS	
152.945	IS	
152.960	IM, IS	
152.975	IS	
152.990	IM, IS	
153.006	IS	
153.020	IM, IS	
153.035	IP, IS	
153.050	IP, IF, LX	
153.065	IP, IF, LX	
153.080	IP, IF, LX	
153.095	IP, IF, LX	
153.110	IP, IF, LX	
153.125	IP, IF, LX	
153.140	IP, IF, LX	
153.155	IP, IF, LX	
153.170	IP, IF, LX	
153.185	IP, IF, LX	
153.200	IP, IF, LX	
153.215	IP, IF, LX	
153.230	IP, IF, LX	
153.245	IP, IF, LX	
153.260	IP, IF, LX	
153.275	IP, IF, LX	
153.290	IP, IF, LX	
153.305	IP, IF, LX	
153.320	IP, IF, LX	
153.335	IP, IF, LX	
153.350	IP, IF, LX	
153.365	IP, IF, LX	
153.380	IP, IF, LX	
153.395	IP, IF, LX	
153.410	IW	
153.425	IW, IP, IF	See limitations for precluded areas.
153.440	IW, IP, IF	Do.
153.455	IW, IP, IF	Do.
153.470	IW	
153.485	IW, IP, IF	Do.
153.500	IW, IP, IF	Do.
153.515	IW, IP, IF	Do.
153.530	IW	
153.545	IW, IP, IF	Do.
153.560	IW, IP, IF	Do.
153.575	IW, IP, IF	Do.
153.590	IW	
153.605	IW, IP, IF	Do.
153.620	IW, IP, IF	Do.
153.635	IW, IP, IF	Do.
153.650	IW	
153.665	IW, IP, IF	Do.
153.680	IW, IP, IF	Do.
153.695	IW	
153.710	IW	
153.725	IW	
153.740	PL	Mobile.
153.755	PL	Do.
153.770	PF	Do.
153.785	PL	Do.
153.800	PL	Do.
153.815	PL	Do.
153.830	PF	Maximum power 10 W.
153.845	PL	Mobile.
153.860	PL	Do.
153.875	PL	Do.
153.890	PF	Do.
153.905	PL	Do.
153.920	PL	Do.
153.935	PL	Do.
153.950	PF	Do.
153.965	PL	Do.
153.980	PL	Do.
153.995	PL	Do.
154.010	PF	Do.
154.025	PL	
154.040	PL	Not available in Puerto Rico and Virgin Islands.
154.055	PL	Do.
154.070	PF	Do.
154.085	PL	Do.
154.100	PL	Do.
154.115	PL	Do.
154.130	PF	Do.
154.145	PF	Do.
154.160	PF	Do.
154.175	PF	Do.
154.190	PF	Do.
154.205	PF	Do.
154.220	PF	Do.
154.235	PF	Do.
154.250	PF	Do.
154.265	PF	Do.
154.280	PF	Do.
154.295	PF	Do.
154.310	PF	Do.
154.325	PF	Do.
154.340	PF	Do.
154.355	PF	Do.
154.370	PF	Do.
154.385	PF	Do.
154.400	PF	Do

Frequency	Services	Special limitations
Megahertz		
154.415	PF	Do.
154.430	PF	Do.
154.445	PF	Do.
154.45625	PL, IW, IP, IF, IS, IB, IX	Remote control and telemetry
154.46375	PL, IW, IP, IF, IS, IB, IX	Do.
154.47125	PL, IW, IP, IF, IS, IB, IX	Do.
154.47875	PL, IW, IP, IF, IS, IB, IX	Do
154.490	IS	
154.515	IB	Maximum power 110 W.
154.540	IB	Do.
154.570	IF, IB	Low power, 2 W
154.585	IP	Oil spill 20 W.
154.600	IF, IB	Low power, 2 W
154.625	IF, IS, IB	IB 1-way paging.
154.650	PP	Mobile.
154.665	PP	State police.
154.680	PP	Do.
154.695	PP	Do.
154.710	PP	Mobile.
154.725	PP	
154.740	PP	
154.755	PP	
154.770	PP	Do.
154.785	PP	
154.800	PP	
154.815	PP	
154.830	PP	Do.
154.845	PP	
154.860	PP	
154.875	PP	
154.890	PP	Do.
154.905	PP	State police
154.920	PP	Do.
154.935	PP	Do.
154.950	PP	Mobile.
154.965	PL	
154.980	PL	
154.995	PL	
155.010	PP	
155.025	PL	
155.040	PL	
155.055	PL	
155.070	PP	
155.085	PL	
155.100	PL	
155.115	PL	
155.130	PP	
155.145	PL	
155.160	PS	Adjacent channel coordination required.
155.175	PS	Do.
155.190	PP	
155.205	PS	Do.
155.220	PS	
155.235	PS	Do.
155.250	PP	
155.265	PS	Do.
155.280	PS	
155.295	PS	Do.
155.310	PP	
155.325	PS	Hospital/ambulance use, coordination required.
155.340	PS	Rediffion and delivery medical services.
155.355	PS	Hospital/ambulance use, coordination required.
155.370	PP	
155.385	PS	Do.
155.400	PS	Do.
155.415	PP	
155,430	PP	
155,445	PP	State police.
155,460	PP	Do.
155,475	PP	Nationwide police emergency channel.
155,490	PP	
155,505	PP	State police.
155,520	PP	
155,535	PP	
155,550	PP	
155,565	PP	
155,580	PP	
155,595	PP	
155,610	PP	
155,625	PP	
155,640	PP	
155.655	PP	
155,670	PP	
155,685	PP	
155,700	PP	
155.715	PL	
155,730	PP	
155,745	PL	
155,760	PL	
155.775	PL	
155,790	PP	

Frequency	Services	Special limitations
Megahertz		
155,805	PL	
155,820	PL	
155,835	PL	
155,850	PP	Mobile.
155,865	PL	
155,880	PL	
155,895	PL	
155,910	PP	Do.
155,925	PL	
155,940	PL	
155,955	PL	
155,970	PP	Do.
155,985	PL	Do.
156.000	PL	Do.
156.015	PL	Do.
156.030	PP	Do.
156.045	PH	Do.
156.060	PH	Do.
156.075	PH	Do.
156.090	PP	Do.
156.105	PH	
156.120	PH	
156.135	PH	
156.150	PP	Do.
156.165	PH	State use not permitted.
156.180	PH	Do.
156.195	PH	Do.
156.210	PP	
156.225	PH	Do.
156.240	PH	Do.
157.450	PS	1-way paging.
157.470	LA	
157.485	LA	
157.500	LA	
157.515	LA	
157.530	LX	
157.545	LX	For use within SMA's over 50,000.
157.560	IB, LX	IB outside, LX inside SMA's (50,000).
157.575	LX	For use within SMA's over 50,000.
157.590	LX	
157.605	LX	Do.
157.620	IB, LX	IB outside, LX inside SMA's (50,000).
157.635	LX	For use within SMA's over 50,000.
157.650	LX	
157.665	LX	Do.
157.680	IB, LX	IB outside, LX inside SMA's (50,000).
157.695	LX	For use within SMA's over 50,000.
157.710	LX	
157.725	IF, IS, LX	
157.740	IF, IS, IB	1-way paging.
158.130	IW	
158.145	IW, IP, IF	See limitations for precluded areas.
158.160	IW, IP, IF	Do.
158.175	IW, IP, IF	Do.
158.190	IW	
158.205	IW, IP, IF	Do.
158.220	IW, IP, IF	Do.
158.235	IW, IP, IF	Do.
158.250	IW	
158.265	IW, IP, IF	Do.
158.280	IP, IF, LX	
158.295	IP, IF, LX	
158.310	IP, IF, LX	
158.325	IP, IF, LX	
158.340	IT	Mobile, communications common carrier.
158.355	IP, IF	
158.370	IP, IF	
158.385	IS	
158.400	IS	Itinerant.
158.415	IP, IF, LX	
158.430	IP, IF, LX	
158.445	IP	Oil spill, mobile.
158.460	IF, IS, IB	1-way paging.
158.730	PP	
158.745	PL	
159.510	LM	
159.525	LM	
159.540	LM	
159.555	LM	
159.570	LM	
159.585	LM	
159.600	LM	
159.615	LM	
159.630	LM	
159.645	LM	
159.660	LM	
159.675	LM	
159.690	LM	
159.705	LM	
159.720	LM	
159.735	LM	
159.750	LM	
159.765	LM	
159.780	LM	
159.795	LM	

Frequency	Services	Special limitations
Megahertz		
159.810	LM	
159.825	LM	
159.840	LM	
159.855	LM	
159.870	LM	
159.885	LM	
159.900	LM	
159.915	LM	
159.930	LM	
159.945	LM	
159.960	LM	
159.975	LM	
159.990	LM	
160.005	LM	
160.020	LM	
160.035	LM	
160.050	LM	
160.065	LM	
160.080	LM	
160.095	LM	
160.110	LM	
160.125	LM	
160.140	LM	
160.155	LM	
160.170	LM	
160.185	LM	
160.200	LM	
160.215	LR	
160.230	LR	
158.760	PL	
158.775	PL	
158.790	PP	
158.805	PL	
158.820	PL	
158.835	PL	
158.850	PP	
158.865	PL	Mobile.
158.880	PL	Do.
158.895	PL	Do.
158.910	PP	Do.
158.925	PL	Do.
158.940	PL	Do.
158.955	PL	Do.
158.970	PP	Do.
158.985	PH	Mobile, State use not permitted.
159.000	PH	Do.
159.015	PH	Do.
159.030	PP	Mobile.
159.045	PH	Mobile, State use not permitted.
159.060	PH	Do.
159.075	PH	Do.
159.090	PP	
159.105	PH	State use not permitted.
159.120	PH	Do.
159.135	PH	Do.
159.150	PP	
159.165	PH	Do.
159.180	PH	
159.195	PH	
159.210	PP	
159.225	PO	
159.240	PO, IS	IS use in Puerto Rico and Virgin Islands only
159.255	PO, IS	Do.
159.270	PO, IS	Do.
159.285	PO, IS	Do.
159.300	PO, IS	Do.
159.315	PO, IS	Do.
159.330	PO, IS	Do.
159.345	PO, IS	Do.
159.360	PO, IS	Do.
159.375	PO, IS	Do.
159.390	PO, IS	Do.
159.405	PO, IS	Do.
159.420	PO, IS	Do.
159.435	PO, IS	Do.
159.450	PO	
159.465	PO	
159.480	IP	Oil spill.
159.495	LM	
160.245	LR	
160.260	LR	
160.275	LR	
160.290	LR	
160.305	LR	
160.320	LR	
160.335	LR	
160.350	LR	
160.365	LR	
160.380	LR	
160.395	LR	
160.410	IS, LR	IS use in Puerto Rico and Virgin Islands only.
160.425	IS, LR	Do.
160.440	IS, LR	Do.
160.455	IS, LR	Do.
160.470	IS, LR	Do.
160.485	IS, LR	Do.
160.500	IS, LR	Do.
160.515	IS, LR	Do.
160.530	IS, LR	Do.
160.545	IS, LR	Do.
160.560	IS, LR	Do.
160.575	IS, LR	Do.
160.590	IS, LR	Do.
160.605	IS, LR	Do.
160.620	LR	
160.635	LR	
160.650	LR	
160.665	LR	
160.680	LR	
160.695	LR	
160.710	LR	
160.725	LR	
160.740	LR	
160.755	LR	
160.770	LR	
160.785	LR	
160.800	LR	
160.815	LR	
160.830	LR	
160.845	LR	
160.860	LR	
160.875	LR	
160.890	LR	
160.905	LR	
160.920	LR	
160.935	LR	
160.950	LR	
160.965	LR	
160.980	LR	
160.995	LR	
161.010	LR	
161.025	LR	
161.040	LR	
161.055	LR	
161.070	LR	
161.085	LR	
161.100	LR	
161.115	LR	
161.130	LR	
161.145	LR	
161.160	LR	
161.175	LR	
161.190	LR	
161.205	LR	
161.220	LR	
161.235	LR	
161.250	LR	
161.265	LR	
161.280	LR	
161.2	LR	
161.310	LR	
161.325	LR	
161.340	LR	
161.355	LR	
161.370	LR	
161.385	LR	Not available in Puerto Rico and Virgin Islands.
161.400	LR	Do.
161.415	LR	Do.
161.430	LR	Do.
161.445	LR	Do.
161.460	LR	Do.
161.475	LR	Do.
161.490	LR	Do.
161.505	LR	Do.
161.520	LR	Do.
161.535	LR	Do.
161.550	LR	Do.
161.565	LR	Do.
163.250	PS	1-way paging.
166.250	PF	Available only within 150 mi of New York City.
169.425	IW, IP, IF, IS, IB, LR	Hydrological or meteorological.
169.450	IW, IP, IF, IS, IB, LR	Do.
169.475	IW, IP, IF, IS, IB, LR	Do.
169.500	IW, IP, IF, IS, IB, LR	Do.
169.525	IW, IP, IF, IS, IB, LR	Do.
170.150	PF	Available only within 150 mi of New York City.
170.225	IW, IP, IF, IS, IB, LR	Hydrological or meteorological.
170.250	IW, IP, IF, IS, IB, LR	Do.
170.275	IW, IP, IF, IS, IB, LR	Do.
170.300	IW, IP, IF, IS, IB, LR	Do.
170.325	IW, IP, IF, IS, IB, LR	Do.
170.425	PO	State use west of Mississippi River.
170.475	PO	State use.
170.575	PO	State use west of Mississippi River.
171.025	IW, IP, IF, IS, IB, LR	Hydrological or meteorological.
171.050	IW, IP, IF, IS, IB, LR	Do.
171.075	IW, IP, IF, IS, IB, LR	Do.
171.100	IW, IP, IF, IS, IB, LR	Do.
171.125	IW, IP, IF, IS, IB, LR	Do.
171.425	PO	State use east of Mississippi River.
171.475	PO	State use west of Mississippi River.
171.575	PO	State use east of Mississippi River.
171.825	IW, IP, IF, IS, IB, LR	Hydrological or meteorological.
171.850	IW, IP, IF, IS, IB, LR	Do.
171.875	IW, IP, IF, IS, IB, LR	Do.
171.900	IW, IP, IF, IS, IB, LR	Do.
171.925	IW, IP, IF, IS, IB, LR	Do.
172.225	PO	State use west of Mississippi River.
172.275	PO	State use east of Mississippi River.
172.375	PO	State use west of Mississippi River.
173.20375	PL, IW, IP, IF, IS, IB, IX	Remote control and telemetry.
173.2100	PL, IW, IP, IF, IS, IB, IX	Do.
173.225	IM, IY	
173.250	IW, IP, IF	See limitations for precluded areas.
173.275	IM, IY	
173.300	IW, IP, IF	Do.
173.325	IM, IY	
173.350	IW, IP, IF	Do.
173.375	IM, IY	
173.39625	PL, IW, IP, IF, IS, IB, IX	Remote control and telemetry.
173.390	PL, IW, IP, IF, IS, IB, IX	Do.
216–220	IW, IP, IF, IS, IB, IX, IT	Telemetry.
451.025	IW	
451.050	IW	
451.075	IW	
451.100	IW	
451.125	IW	
451.150	IW	
451.175	IW, IP, IF, IM, IT	
451.200	IW	
451.225	IW, IP, IF, IM, IT	
451.250	IW	
451.275	IW, IP, IF, IM, IT	
451.300	IW	
451.325	IW	
451.350	IW	
451.375	IW, IP, IF, IM, IT	
451.400	IT	
451.425	IW, IP, IF, IM, IT	
451.450	IT	
451.475	IW, IP, IF, IM, IT	
451.500	IT	
451.525	IW, IP, IF, IM, IT	
451.550	IP, IF	
451.575	IW, IP, IF, IM, IT	
451.600	IP, IF	
451.625	IW, IF, IP	
451.650	IP, IF	
451.675	IW, IP, IF, IM, IT	
451.700	IP, IF	
451.725	IS	
451.750	IP, IF	
451.775	IS	
451.800	IS	
451.825	IS	
451.850	IS	
451.875	IS	
451.900	IS	
451.925	IS	
451.950	IS	
451.975	IS	
452.000	IS	
452.025	IS	
452.050	LX	
452.075	IS	
452.100	LX	
452.125	IS	
452.150	LX	
452.175	IS	
452.200	LX	
452.225	LX	
452.250	LX	
452.275	LX	
452.300	LX	
452.325	LI, LJ, LU, LV, LR	
452.350	LX	
452.375	LI, LJ, LU, LV, LR	
452.400	LX	
452.425	LI, LJ, LU, LV, LR	
452.450	LX	

Frequency	Services	Special limitations
Megahertz		
452.475	LI, LJ, LU, LV, LR	
452.500	LX	
452.525	LA	Single frequency simplex.
452.550	LA	
452.550	LA	Do.
452.575	LA	Do.
452.600	LA	Do.
452.625	LI, LJ, LU, LV	
452.650	LI, LJ, LU, LV	
452.675	LI, LJ, LU, LV	
452.700	LI, LJ, LU, LV	
452.725	LI, LJ, LU, LV	
452.750	LI, LJ, LU, LV	
452.775	LI, LJ, LU, LV, LR	
452.800	LI, LJ, LU, LV	
452.825	LI, LJ, LU, LV, LR	
452.850	LI, LJ, LU, LV	
452.875	LI, LJ, LU, LV, LR	
452.900	LR	
452.925	LR	
452.950	LR	
452.975	IY	
453.000	IY	
453.025	PL	Highway call box and medical telemetry.
453.050	PL, PP, PF, PH, PO	
453.075	PL	Do.
453.100	PL, PP, PF, PH, PO	
453.125	PL	Do.
453.150	PL, PP, PF, PH, PO	
453.175	PL	Do.
453.200	PL, PP, PF, PH, PO	
453.225	PL	
453.250	PL, PP, PF, PH, PO	
453.275	PL	
453.300	PL, PP, PF, PH, PO	
453.325	PL	
453.350	PL, PP, PF, PH, PO	
453.375	PL	
453.400	PL, PP, PF, PH, PO	
453.425	PL	
453.450	PL, PP, PF, PH, PO	
453.475	PL	
453.500	PL, PP, PF, PH, PO	
453.525	PL	
453.550	PL, PP, PF, PH, PO	
453.575	PL	
453.600	PL, PP, PF, PH, PO	
453.625	PL	
453.650	PL, PP, PF, PH, PO	
453.675	PL	
453.700	PL, PP, PF, PH, PO	
453.725	PL	
453.750	PL, PP, PF, PH, PO	
453.775	PL	
453.800	PL, PP, PF, PH, PO	
453.825	PL	
453.850	PL, PP, PF, PH, PO	
453.875	PL	
453.900	PL, PP, PF, PH, PO	
453.925	PL	
453.950	PL, PP, PF, PH, PO	
453.975	PL	
454.0–455.0	(3)	
455.0–456.0	(3)	
456.025	IW	Mobile only
456.050	IW	Do.
456.075	IW	Do.
456.100	IW	Do.
456.125	IW	Do.
456.150	IW	Do.
456.175	IW, IP, IF, IM, IT	Do.
456.200	IW	Do.
456.225	IW, IP, IF, IM, IT	Do.
456.250	IW	Do.
456.275	IW, IP, IF, IM, IT	Do.
456.300	IT	Do.
456.325	IT	Do.
456.350	IT	Do.
456.375	IW, IP, IF, IM, IT	Do.
456.400	IT	Do.
456.425	IW, IP, IF, IM, IT	Do.
456.450	IT	Do.
456.475	IW, IP, IF, IM, IT	Do.
456.500	IT	Do.

Footnote at end of table.

Frequency	Services	Special limitations
Megahertz		
456.525	IW, IP, IF, IM, IT	Do.
456.550	IP, IF	Do.
456.575	IW, IP, IF, IM, IT	Do.
456.600	IP, IF	Do.
456.625	IW, IP, IF, IM, IT	Do.
456.650	IP, IF	Do.
456.675	IW, IP, IF, IM, IT	Do.
456.700	IP, IF	Do.
456.725	IS	Do.
456.750	IP, IF	Do.
456.775	IS	Do.
456.800	IS	Base, mobile, fixed.
456.825	IS	Mobile only.
456.850	IS	Do.
456.875	IS	Do.
456.900	IS	Do.
456.925	IS	Do.
456.950	IS	Do.
456.975	IS	Do.
457.000	IS	Do.
457.025	IS	Do.
457.050	LX	Do.
457.075	IS	Do.
457.100	LX	Do.
457.125	IS	Do.
457.150	LX	Do.
457.175	IS	Do.
457.200	LX	Do.
457.225	LX	Do.
457.250	LX	Do.
457.275	LX	Do.
457.300	LX	Do.
457.325	LI, LJ, LU, LV LR	Do.
457.350	LX	Do.
457.375	LI, LJ, LU, LV LR	Do.
457.400	LX	Do.
457.425	LI, LJ, LU, LV LR	Do.
457.450	LX	Do.
457.475	LI, LJ, LU, LV, LR	Do.
457.500	LX	Do.
457.525	IB	Mobile only 2 W.
457.550	IB	Do.
457.575	IB	Do.
457.600	IB	Do.
457.625	LI, LJ, LU, LV	Mobile only.
457.650	LI, LJ, LU, LV	Do.
457.675	LI, LJ, LU, LV	Do.
457.700	LI, LJ, LU, LV	Do.
457.725	LI, LJ, LU, LV	Do.
457.750	LI, LJ, LU, LV	Do.
457.775	LI, LJ, LU, LV, LR	Do.
457.800	LI, LJ, LU, LV	
457.825	LI, LJ, LU, LV, LR	
457.850	LI, LJ, LU, LV	
457.875	LI, LJ, LU, LV, LR	
457.900	LR	
457.925	LR	
457.950	LR	
457.975	IY	
458.000	IY	
458.025	PS	Highway call box; medical telemetry.
458.050	PL, PP, PF, PH, PO	
458.075	PS	Do.
458.100	PL, PP, PF, PH, PO	
458.125	PS	Do.
458.150	PL, PP, PF, PH, PO	
458.175	PS	Do.
458.200	PL, PP, PF, PH, PO	
458.225	PS	
458.250	PL, PP, PF, PH, PO	
458.275	PS	
458.300	PL, PP, PF, PH, PO	
458.325	PS	
458.350	PL, PP, PF, PH, PO	
458.375	PS	
458.400	PL, PP, PF, PH, PO	
458.425	PS	
458.450	PL, PP, PF, PH, PO	
458.475	PS	
458.500	PL, PP, PF, PH, PO	
458.525	PL	
458.550	PL, PP, PF, PH, PO	
458.575	PL	

Frequency	Services	Special limitations
Megahertz		
458.600	PL, PP, PF, PH, PO	
458.625	PL	
458.650	PL, PP, PF, PH, PO	
458.675	PL	
458.700	PL, PP, PF, PH, PO	
458.725	PL	
458.750	PL, PP, PF, PH, PO	
458.775	PL	
458.800	PL, PP, PF, PH, PO	
458.825	PL	
458.850	PL, PP, PF, PH, PO	
458.875	PL	
458.900	PL, PP, PF, PH, PO	
458.925	PL	
458.950	PL, PP, PF, PH, PO	
458.975	PL	
459.000	IP	Oil spill cleanup.
459.0 to 460.0	(3)	
460.025	PP	
460.050	PP	
460.075	PP	
460.100	PP	
460.125	PP	
460.150	PP	
460.175	PP	
460.200	PP	
460.225	PP	
460.250	PP	
460.275	PP	
460.300	PP	
460.325	PP	
460.350	PP	
460.375	PP	
460.400	PP	
460.425	PP	
460.450	PP	
460.475	PP	
460.500	PP	
460.525	PS	Medical care dispatch.
460.550	PS	Do.
460.575	PF	
460.600	PF	
460.625	PF	
460.650	IB	20 w, airport use.
460.675	IB	Do.
460.700	IB	Do.
460.725	IB	Do.
460.750	IB	Do.
460.775	IB	Do.
460.800	IB	Do.
460.825	IB	Do.
460.850	IB	Do.
460.875	IB	Do.
460.900	IB	110 w, central station protection.
460.925	IB	Do.
460.950	IB	Do.
460.975	IB	Do.
461.000	IB	Do.
461.025	IB	Do.
461.050	IB	Do.
461.075	IB	Do.
461.100	IB	Do.
461.125	IB	Do.
461.150	IB	Do.
461.175	IB	Do.
461.200	IB	Do
461.225	IB	Do
461.250	IB	Do
461.275	IB	Do
461.300	IB	Do.
461.325	IB	Do.
461.350	IB	Do.
461.375	IB	Do.
461.400	IB	Do.
461.425	IB	Do.
461.450	IB	Do.
461.475	IB	Do.
461.500	IB	Do.
461.525	IB	Do.
461.550	IB	Do.
461.575	IB	Do.
461.600	IB	Do.
461.625	IB	Do.
461.650	IB	Do.
461.675	IB	Do.
461.700	IB	Do.
461.725	IB	Do.
461.750	IB	Do
461.775	IB	Do.
461.800	IB	Do.
461.825	IB	Do.
461.850	IB	Do.
461.875	IB	Do.
461.900	IB	Do.
461.925	IB	Do.

Frequency	Services	Special limitations
Megahertz		
461.950	IB	Do.
461.975	IB	Do.
462.000	IB	Do
462.025	IB	Do.
462.050	IB	Do.
462.075	IB	Do.
462.100	IB	Do.
462.125	IB	Do.
462.150	IB	Do.
462.175	IB	Do
462.200	IM	
462.225	IM	
462.250	IM	
462.275	IM	
462.300	IM	
462.325	IM	
462.350	IM	
462.375	IM	
462.400	IM	
462.425	IM	
462.450	IM	
462.475	IW, IP, IF, IM, IT	
462.500	IM	
462.525	IW, IP, IF, IM, IT	
462.550-462.725	(4)	
462.750	IB	Base only, 1-way paging.
462.775	IB	Do.
462.800	IB	Do.
462.825	IB	Do.
462.850	IB	Do.
462.875	IB	Do.
462.900	IB	Do.
462.925	IB	Do
462.950	PS	
462.975	PS	
463.000	PS	Med 1
463.025	PS	Med 2.
463.050	PS	Med 3.
463.075	PS	Med 4.
463.100	PS	Med 5.
463.125	PS	Med 6.
463.150	PS	Med 7.
463.175	PS	Med 8.
463.200	IB	110 W.
463.225	IB	Do.
463.250	IB	Do.
463.275	IB	Do.
463.300	IB	Do.
463.325	IB	Do.
463.350	IB	Do.
463.375	IB	Do.
463.400	IB	Do.
463.425	IB	Do.
463.450	IB	Do.
463.475	IB	Do.
463.500	IB	Do.
463.525	IB	Do.
463.550	IB	Do.
463.575	IB	Do.
463.600	IB	Do.
463.625	IB	Do.
463.650	IB	Do.
463.675	IB	Do.
463.700	IB	Do.
463.725	IB	Do.
463.750	IB	Do.
463.775	IB	Do.
463.800	IB	Do.
463.825	IB	Do.
463.850	IB	Do.
473.875	IB	Do.
463.900	IB	Do
463.925	IB	Do.
463.950	IB	Do.
463.975	IB	Do.
464.000	IB	Do.
464.025	IB	Do
464.050	IB	Do.
464.075	IB	Do.
464.100	IB	Do.
464.125	IB	Do.
464.150	IB	Do.
464.175	IB	Do.
464.200	IB	Do.
464.225	IB	Do.
464.250	IB	Do.
464.275	IB	Do.
464.300	IB	Do.
464.325	IB	110 W, local control only.
464.350	IB	110 W.
464.375	IB	110 W, local control only
464.400	IB	110 W.
464.425	IB	110 W, local control only
464.450	IB	110 W
464.475	IB	110 W, local control only.
464.500	IB	35 W, itinerant use.
464.525	IB	110 W, local control only.
464.550	IB	35 W, itinerant use
464.575	IB	110 W, local control only.
464.600	IB	110 W.
464.625	IB	Do.
464.650	IB	Do.
464.675	IB	110 W, local control only.
464.700	IB	110 W.
464.725	IB	Do.
464.750	IB	Do.
464.775	IB	110 W, local control only.
464.800	IB	110 W.
464.825	IB	110 W, local control only.
464.850	IB	110 W.
464.875	IB	110 W, local control only.
464.900	IB	110 W
464.925	IB	110 W, local control only
464.950	IB	110 W.
464.975	IB	110 W, local control only.
465.000	IB	35 W. 1-way paging
465.025	PP	
465.050	PP	
465.075	PP	
465.100	PP	
465.125	PP	
465.150	PP	
465.175	PP	
465.200	PP	
465.225	PP	
465.250	PP	
465.275	PP	
465.300	PP	
465.325	PP	
465.350	PP	
465.375	PP	
465.400	PP	
465.425	PP	
465.450	PP	
465.475	PP	
465.500	PP	
465.525	PP	Nonvoice.
465.550	PP	Do.
465.575	PF	
465.600	PF	
465.625	PF	
465.650	IB	2 W, airport use.
465.675	IB	Do.
465.700	IB	Do.
465.725	IB	Do.
465.750	IB	Do.
465.775	IB	Do.
465.800	IB	Do.
465.825	IB	Do.
465.850	IB	Do.
465.875	IB	2 W, airport use, telemetry.
465.900	IB	110 W, central station protection.
465.925	IB	Do.
465.950	IB	Do.
465.975	IB	Do.
466.000	IB	Do.
466.025	IB	110 W, mobile; directional fixed.
466.050	IB	Do.
466.075	IB	Do.
466.100	IB	Do.
466.125	IB	Do.
466.150	IB	Do.
466.175	IB	Do.
466.200	IB	Do.
466.225	IB	Do.
466.250	IB	Do.
466.275	IB	Do.
466.300	IB	Do.
466.325	IB	Do.
466.350	IB	Do.
466.375	IB	Do.
466.400	IB	Do.
466.425	IB	Do.
466.450	IB	Do.
466.475	IB	Do.
466.500	IB	Do.
466.525	IB	Do.
466.550	IB	Do.
466.575	IB	Do.
466.600	IB	Do.
466.625	IB	Do.
466.650	IB	Do.
466.675	IB	Do.
466.700	IB	Do.
466.725	IB	Do.
466.750	IB	Do.
466.775	IB	Do.
466.800	IB	Do.
466.825	IB	Do.
466.850	IB	Do.
466.875	IB	Do.
466.900	IB	Do.
466.925	IB	Do.
466.950	IB	Do.
466.975	IB	Do.
467.000	IB	Do.
467.025	IB	Do.
467.050	IB	Do.
467.075	IB	Do.
467.100	IB	Do.
467.125	IB	Do.
467.150	IB	Do.
467.175	IB	Do.
467.200	IM	Mobile only.
467.225	IM	Do.
467.250	IM	Do.
467.275	IM	Do.
467.300	IM	Do.
467.325	IM	Do.
467.350	IM	Do.
467.375	IM	Do.
467.400	IM	Do.
467.425	IM	Do.
467.450	IM	Do.
467.475	IM, IW, IP, IF, IT	Do.
467.500	IM	Do.
467.525	IM, IW, IP, IF, IT	Do.
467.550-465.725	(4)	
467.750	IB	2 W, telemetry.
467.775	IB	Do
467.800	IB	Do
467.825	IB	Do
467.850	IB	Do
467.875	IB	Do.
467.900	IB	Do.
467.925	IB	Do.
467.950	PS	Medical care dispatch.
467.975	PS	Do.
468.000	PS	Med 1.
468.025	PS	Med 2.
468.050	PS	Med 3.
468.075	PS	Med 4.
468.100	PS	Med 5.
468.125	PS	Med 6.
468.150	PS	Med 7.
468.175	PS	Med 8.
468.200	IB	110 W, mobile; directional fixed.
468.225	IB	Do.
468.250	IB	Do.
468.275	IB	Do.
468.300	IB	Do.
468.325	IB	Do.
468.350	IB	Do.
468.375	IB	Do.
468.400	IB	Do.
468.425	IB	Do.
468.450	IB	Do.
468.475	IB	Do.
468.500	IB	Do.
468.525	IB	Do.
468.550	IB	Do.
468.575	IB	Do.
468.600	IB	Do.
468.625	IB	Do.
468.650	IB	Do.
468.675	IB	Do.
468.700	IB	Do.
468.725	IB	Do.
468.750	IB	Do.
468.775	IB	Do.
468.800	IB	Do.
468.825	IB	Do.
468.850	IB	Do.
468.875	IB	Do.
468.900	IB	Do.
468.925	IB	Do.
468.950	IB	Do.
468.975	IB	Do.
469.000	IB	Do.
469.025	IB	Do.
469.050	IB	Do.
469.075	IB	Do.
469.100	IB	Do.
469.125	IB	Do.
469.150	IB	Do.
469.175	IB	Do.
469.200	IB	Do.
469.225	IB	Do.
469.250	IB	Do.
469.275	IB	Do.
469.300	IB	Do.
469.325	IB	Do.
469.350	IB	Do.
469.375	IB	Do.
469.400	IB	Do.
469.425	IB	Do.
469.450	IB	Do.
469.475	IB	Do.
469.500	IB	35 W, itinerant.
469.525	IB	110 W, mobile; directional fixed.
469.550	IB	35 W, itinerant.
469.575	IB	110 W, mobile; directional fixed.
469.600	IB	110 W.

Frequency	Services	Special limitations
Megahertz		
469.625	IB	Do.
469.650	IB	Do.
469.675	IB	110 W, mobile; directional fixed.
469.700	IB	Do.
469.725	IB	Do.
469.750	IB	Do.
469.775	IB	Do.
469.800	IB	Do.
469.825	IB	Do.
469.850	IB	Do.
469.875	IB	Do.
469.900	IB	Do.
469.925	IB	Do.
469.950	IB	Do.
469.975	IB	Do.
470.000-0125-470.2875	(3)	
470-512	(1)	Available in 13 urbanized areas only in accordance with provisions of subpt. L.

[1] All services.
[2] Domestic public.
[3] Remote pickup broadcast.
[4] Citizen's class A.

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